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A PERSONAL MESSAGE FROM THE AUTOMOTIVE LEADERS

MOTOR TREND

The Magazine for a Motoring World

MARCH 1951

25c

GENERAL MOTORS SPORTS CAR

See Page 17

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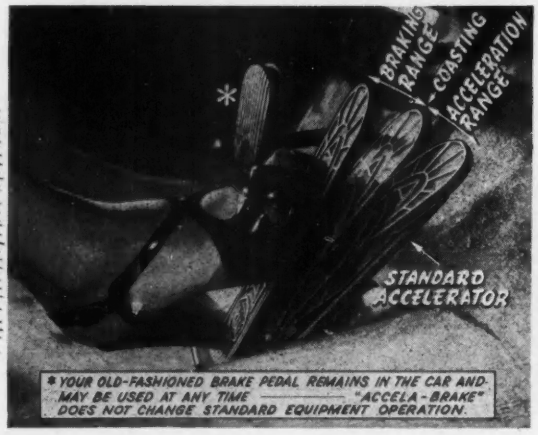
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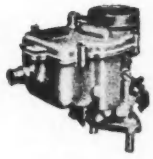

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MOTOR Trend

The Magazine for a Motoring World

MARCH 1951 Published Monthly VOL. 3 • NO. 3

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COVER: The cover design for this issue is definitely different, but the stories that go along with it are also different. For the first time, to our knowledge, a publication is able to give to its readers a personal report from the majority of present-day automotive manufacturers. This report can be found on page nine. The details on General Motors custom-built sport car are on page 17.

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SO YOU THINK BATHING SUITS HAVE CHANGED?

IN 31 YEARS, have suits changed as much as these cars—1919 Rolls-Royce and 1950 Cadillac? Peggie Castle's appearance was arranged to call attention to December's Auto Club of So. Calif.-General Petroleum sponsored re-enactment of historic 1903 Los Angeles to Redlands Endurance Run

YOUR EDITOR SAYS . . .

YOU ASKED for it—and now you're going to get it.

But, what we're going to give isn't going to be hard to take, and we're sure that you'll be as pleased with it as we are.

In answer to the most frequent request that we've received since we first started publishing MOTOR TREND (in Sept. '49), and effective with the April 1951 issue, we're adding 16 more pages. This has been made possible through YOU and *your response*, for a magazine, or any other publication, stands or falls on public acceptance.

And, because of this reason, we're adding and will continue to add, the type of features that YOU want, plus expanding those features which are now your favorites.

One of the new features (which is actually being started in this issue) is "Sports Trials." This is an expansion of our policy of keeping you informed about the performance of new cars, except that it will be concerned with sports cars (foreign and domestic) and stock foreign cars that have had public acclaim.

The first Sports Trial (see page 16) concerns the Crosley Super Sport. It was conducted for us by a man well qualified in this field—G. Thatcher Darwin, a MOTOR TREND staff writer. "Thatch" took the Super Sport on a rugged test over some back wood country and if he couldn't find any faults with the Crosley there, it doesn't have any. We're sure you'll find this first Sports Trial interesting reading. Let us know your preference for cars to test in this feature and we'll place them on our agenda.

The April issue, which you'll find sporting a *four-color* drawing for the first time, will have other new features: "Custom Hints" and "Duster Data" (which got crowded out of the magazine in preference to more up-to-date features, but which, according to many letters, still has nostalgic appeal).

Also in that issue you'll read an article of the type which we intend to repeat as often as possible—about subjects with great significance and those which you can't find out about elsewhere. The first of these is an achievement we're extremely proud to present—the inside story of the Phoenix Project and the Atomic Car. Harry Cushing, our able Detroit Representative, has spent considerable time in compiling this information through research, discussion and interviews with top atomic scientists at the University of Michigan (where the Phoenix Project is under full swing). This is one story you definitely *cannot* afford to miss.

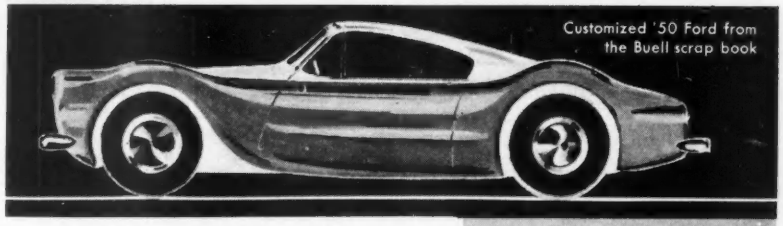
And, speaking of achievements, Harry has given us one in this month's issue with the personal reports to YOU from the presidents of the various auto companies. These statements were prepared *especially* for the readers of MOTOR TREND.

Inevitably, with expansion of a magazine comes more work. And since we couldn't think of anyone we would like better to have help us with this work, we asked Griffith Borgeson to be our associate editor. For him to carry out these duties, it was necessary for him to give up his San Francisco home and move to the City of Angels. Please note that his new address will be the same as ours.

L.A. HOT ROD SHOW (JAN. 25-28): In the last-minute makeup of our Feb. '51 issue, we incorrectly deleted the wrong Los Angeles show from our Calendar of Events (page four). The annual Hot Rod and Motor Sports Show will be held Jan. 25-28, at the National Guard Armory; however, the 29th Annual Los Angeles Automobile Show has been cancelled. The Hot Rod and Motor Sports Show features cars of all types, with emphasis on hot rods, sports and foreign cars.

—W.W.

NEW AIR HORNS WITH VOLUME CONTROL



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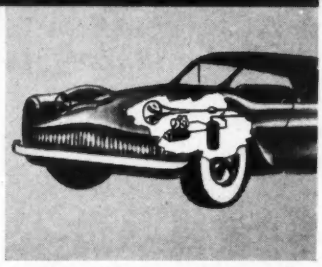
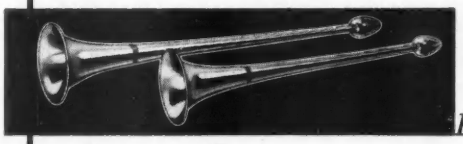


Buell Air Horns can be mounted on outside or under hood. You can further customize your car by mounting horns behind horn port grilles, in fender or hood wells, or streamlined nacelles. Send for Buell literature.



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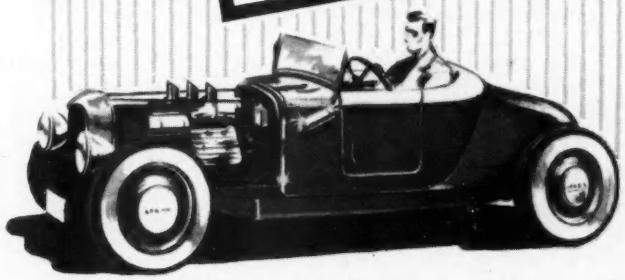

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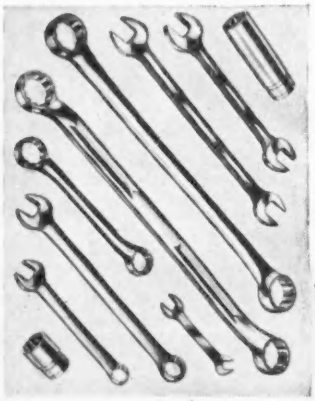

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Letters...

FROM OUR READERS

Letters published in this department are the opinions of the writers and are not to be construed as those of the editors. Address correspondence to: Letters From Our Readers, MOTOR TREND, 1015 So. La Cienega Boulevard, Los Angeles 35, California.

RESTYLING DEPARTMENT

Gentlemen:

I am enclosing a snapshot of a 1939 Willys Overland coupe which I recently remodeled.

The body was moved back eight ins. and

dropped five ins. This model has a 102-in. wheelbase. It is finished in birch gray, with vermillion wheels, and vermillion-colored, leather upholstery.

Edgar W. Frazer
West Orange, New Jersey

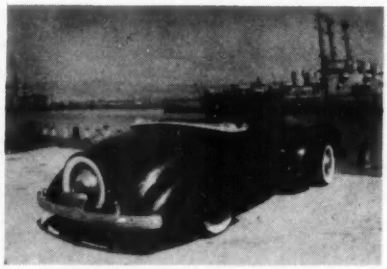
Gentlemen:

The body [of my '39 convertible Plymouth coupe] has been body sectioned, just above the fenders, 5½ ins., with two-in. lowering blocks at the rear. The car stands four ft. six ins. to the top of the windshield. An even 100 lbs. of lead was used.

It is powered by a Chrysler six bored to 3½ ins. with a ¾ cam, dual carbs and a special head . . .

Robert A. Atwood
Oakland, California

P.S. This is my first attempt at body work. . . .
R.A.A.



—For a first, or even later, attempt, we would say that you've done a fine job of body work.
—Editor

CIRCUMVENTING CHANNELS

Gentlemen:

. . . Your articles are usually well-written, timely and conclusive.

. . . I have learned a great deal about sports cars and roadsters that would have taken a lot longer through experience.

I am employed by the Cadillac Motor Co. here in Chicago and it has given me quite a lot of satisfaction to get some of the news from Detroit through your magazine before it comes through the regular channels. . . .

Byron D. King
Chicago, Illinois

FOR HIGH SPEEDS?

Gentlemen:

After reading your magazine for the past year, customizing cars has got under my skin; so here is my first attempt on my '47 Buick Roadmaster. I call this gadget an Aro-Fin, and it has met with surprisingly favorable comment and approval, even in this strictly conventional car state.

I also split the manifold and installed twin through mufflers, which, I might add, is catching on fast here in the east. . . .

Wesley L. Winne
Newark, New Jersey

—But, what we want to know is, what's it for?
—Editor

A DRIVER'S BEST FRIEND

Gentlemen:

The following is in reference to your "Sporting Scene" column of the January 1951 issue.

A tachometer is the race driver's best friend. To disconnect or mask fachs and speedometers would be a step in the wrong direction. Give the driver every helpful device available, don't, handicap him by taking away those which he has learned to rely on.

As for compulsory driving tests for all participants, and adequate and effective spectator policing, both are musts for safe races. Judging from my own observations, I feel that careless and thoughtless spectators constitute one of the most serious potential hazards on any road racing course.

Acceleration tests, flying quarters, etc., are fine—in their proper place—but as a substitution for high speed racing, NEVER. Any throttle jockey can tour a course at moderate speed, but it's up in the high speed bracket that a driver proves his true mettle.

Don't, under any circumstances, professionalize sports car racing. Sports car racing is one of the few surviving gentlemen's sports. The participants are SPORTSMEN, who are matching their cars and driving skills against one another solely because they enjoy doing it. It's friendly sport, not cut-throat competition. If professionalized it will cease to be a fine sport that it is today and will become nothing more than a cheap commercialization of its former self. If you want to go pro get in the NASCAR circuit.

H. Burt Eldridge
Lewisburg, Pennsylvania

—We reported a poll of opinion among sports car owners for improvement of future meets. The above is one of the reactions. What's yours?
—Editor

RESTYLED HUDSON

Gentlemen:

The customizing of automobiles seems to center only on autos manufactured by the "Big Three." Here is my conception of a reworked Hudson sedan.

Bill Voight
St. Paul, Minnesota

(Continued on page eight)

The Luxury Look

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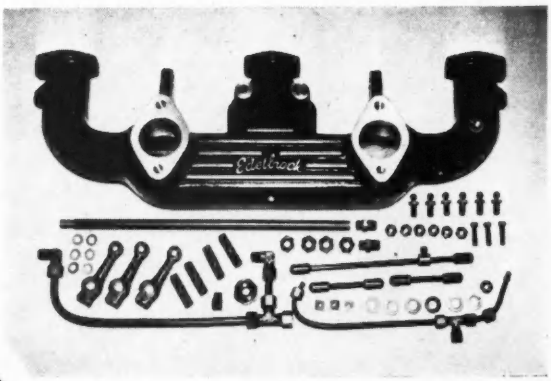

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Letters from Our Readers

(Continued from page seven)

COMMENTS ON CLASSIC COMMENTS

Gentlemen:

I want you to know that no column in MOTOR TREND ever appealed to me more than your "Classic Comments" in the February 1951 issue. I am not particularly a Hispano fan, but that Medley picture of that sporty white monster is a beauty!

And I especially like your quoting prices on special cars recently advertised in various areas. Naturally, I am interested in cars advertised in the Southern Calif. area—but not by the Beverly Hills crowd. For a Series J Duesenberg the other day they were asking $2600.

I hope to own a Duesenberg some day, either the J or the SJ, that fabulous supercharged beast that was the envy of the less fortunate up to 1933 or '34. Thus, any data you care to publish in future columns on performance, etc., of this automobile will be avidly read by me.

Dick Mohr
Beverly Hills, Calif.

—You've given us what we've asked for—comments on this new feature. Let's hear from more of you.—Editor

A BOUQUET OF ORCHIDS

Gentlemen:

You have probably received hundreds of letters . . . about how bad your publication is, or things you've missed, errors you have made—I should like to take this opportunity to compliment you and your staff on the following: 1. Colorful, eye-catching covers, 2. Wonderful sketches and drawings by Tom Medley, 3. Interesting articles, 4. Variation in the hardest category—ads, and 5. Indexing [Jan. '51 issue].

I could go on for several pages telling you what I like about your publication. . . .

If you have some spare space (don't smile!) sometime in '51 could you feature slight custom changes for ['48 Ford] Tudors?

Donald G. Bunnan
Williamsville, New York

—Flattery will get you nowhere, but how can we resist? Incidentally, our space problem will be greatly relieved starting with the next issue. See editorial.—Editor

A LESSON IN COUNTING

Gentlemen:

It is indeed strange that anyone would try to impress the public with the importance of a test, and the test answers that you give with same are incorrect. For example, you state on page 13 of your Jan. issue ["Are You A Safe Driver?"] that block A is only touched by four other blocks, when it is plain to see that it is touched by five. Count them again. The blank between A and B, also C, D, E, and also the blank to the right of E. That counts for five in North Texas. Maybe we count different here?

Fred Scoggin
Denison, Texas

—Far be it from us to argue with a Texan, but this once it looks like one is wrong. You were right in all respects except that block D does not touch any other block except C and E. Now you count them.—Editor

WHO IS IT?

Gentlemen:

While looking over the newsstand, the cover of your January issue caught my eye. I bought the issue and turned to where the cover car is usually explained. Just as a guess I would say that it is the Wynn Friction Proofing Special, and directly behind it the Bowes Seal Fast Special. How close did I come? . . .

Jack Greiner
Salem, Oregon

—The car is the Wynn Special, with "Fearless Freddie" Agabashian at the wheel. But as to who is behind him, obscured in the dust, your guess is as good as Photographer E. Rickman's. —Editor

DETROIT SPEAKS!

ALBERT H. ISAACS

A Personal Message From Automotive Leaders to the Readers of Motor Trend

As Told to Harry Cushing

NOTE: When Harry Cushing, MOTOR TREND'S *Detroit Representative, suggested the idea of an article to include statements from leaders in the automotive industry on the future of the industry, we gave him a quick go-ahead. After the material was all prepared, the bulk of it special to* MOTOR TREND, *it became evident that because of the present national emergency it was even more important than we had previously thought. What the presidents of these companies have to say concerns all of us.—Editor.*

WILLIAM J. CRONIN, Managing Director, Automobile Manufacturers Association

IN MOVING into 1951, the automotive industry is confronted with an important two-fold assignment.

First, it must do its part in meeting every call of the military for production of weapons.

Second, it must do its part in maintaining and in strengthening the nation's highway transportation system. Motor vehicles, and the highways they travel, are today "tools of production," sharing in importance with America's other productive assets such as factories, machines, conveyors and tools.

The first job holds top priority throughout the automobile industry, but no clear indication has yet been received as to the extent the military will call on the industry's producers.

The second job, meanwhile, may be seriously affected by the imposition of government orders restricting the use of aluminum, copper, zinc and other materials.

Defense orders placed with the industry to date are few, and hold no present likelihood of offsetting prospective curtailment in production of motor vehicles and the ensuing reduction in employment.

Even if defense orders should be placed in volume in coming weeks, it will take many months to complete the tooling and production planning which is necessary in switching over to output of military items.

POWELL CROSLEY, JR., President, Crosley Motors, Inc.

MY INTEREST in small cars goes back many years. When I was only a boy of 13, my brother Lewis and I built a little chain-driven car operated by an electric motor with a storage battery as the power source. I recall that my father gave us a $10 prize for getting it to run.

About 10 years later, I built a cycle car with a two-cyl. V-type engine. It was my experience with this car that gave rise to my desire to manufacture lightweight, low-cost motor vehicles. However, quite a few more years were to pass and I was to get into an entirely different field—that of manufacturing radios, refrigerators and other household appliances—before I realized this desire to build small, low-priced automobiles on a production basis.

In 1939, when I was President of the Crosley Corporation, we designed and produced in the Automotive Division of that company a small Crosley car weighing about 1000 lbs. This car had a two-cyl. air-cooled engine, delivering 12.5 horsepower at 4000 rpm and it listed at what now seems an unbelievably low price, $325 for the Convertible Coupe and $350 for the Convertible Sedan. The production of this pre-war Crosley car ceased because of the conversion of our plant facilities to war work during World War II.

After the war, I organized Crosley Motors, Inc. and that new company, in June, 1946, produced the first in the post-war series of Crosley cars. These cars are completely different in design from the earlier Crosleys. They have a four-cyl., water-cooled Crosley engine developing 26.5 horsepower at 5400 rpm and they are larger than the pre-war Crosleys, ranging in weight from 1175 to 1400 lbs. Their prices, of course, are higher today; but it is still true that the Crosley is the only American-built car delivering at the factory for under $1000. Many others have talked about the "$1000 car" and some others have even advertised it; but Crosley Motors, Inc. is the only company which has actually built it. Over 75,000 of the post-war Crosleys have been sold.

The early type of Crosley car was built in only two body styles. Today the new Crosley

DETROIT SPEAKS . . .

passenger automobiles are available in the Sedan, Business Coupe, Roadster, and Station Wagon models, and we have both a Standard and a Super line. Crosley trucks are made in Panel Delivery and Pick-up models.

In addition to these, Crosley has recently developed and put on the market a sturdy multi-purpose vehicle which is designed and built to serve the farmer both as a farm tractor and as a road vehicle. Our FarmOroad is about 45 ins. high, 48 ins. wide, and 92 ins. long, with a wheelbase of 63 ins. It has a front and rear power take-off, useful in sawing wood, running generators, pumps, and other belt-driven farm equipment. It is equipped with a hydraulic lift to which may be attached all types of farm equipment, including plow, harrow, cultivator, sickle-bar mower, etc. The implements may all be attached with a minimum of time and effort and by one man.

For use on the road several types of FarmOroad bodies are available, including the pick-up body and the hydraulically controlled dump truck body. A detachable rear seat may be obtained to convert the FarmOroad to a comfortable four-passenger vehicle.

At Crosley Motors, we have followed a policy of diversifying our products. Besides cars and trucks, we also manufacture a marine engine unit and several types of commercial engines. The use of our marine engine is increasing with the growing interest in inboard motorboats. The commercial engines have found application in truck refrigerating units, bus air-conditioning systems and material handling equipment.

We are looking forward to a better year in 1951 on all of our products but, at the same time, we realize that increasing restrictions made necessary by the imminence of another World War may change the production and price pictures entirely.

L. L. COLBERT, President of Chrysler Corporation; President of Dodge Division

WHEN FUTURE histories are written about Chrysler Corporation, the year 1950 will undoubtedly go down as one of the most unusual in the company's quarter century in the automotive industry.

Not only did the Corporation make a remarkable comeback in 1950 after a costly delay in getting its production rolling early in the year, but it also managed to better all previous production records, to pass along to employees substantial wage, pension and insurance benefits, to enlarge the production facilities in many of its plants, and to raise its working force to the highest peacetime level.

The high standards of Chrysler product quality were not only maintained during the year, but were increased as is evidenced by owner satisfaction and enthusiasm for the company's 1950 lines of Plymouth, Dodge, DeSoto and Chrysler passenger cars and Dodge trucks which was greater than ever before in our history.

Resourcefulness and ingenuity on the part of management and supervisory people at Chrysler were largely responsible for the record production year. While the company's operations were shut down for 14 weeks, extra banks of materials and finished parts were built up and all facilities were kept in readiness to go into immediate production when the plants were reopened. When in May a railroad strike threatened to curtail our operations, the company enlisted every available moving van and truck and built temporary roads over plant railroad sidings so that railroad loading and unloading docks could be used.

Along with its history-making production records, Chrysler Corporation was also active during the year in working out pension, insurance and wage questions for its employees.

Agreement on a company pension offer was reached between Chrysler and the UAW-CIO on May 4. This first plan, which went into effect on August 1, provided principally for pensions of $100 a month including social security for employees at age 65 with 25 years of accredited service and proportionate pensions for employees at age 65 with 10 or more years of accredited service.

On August 25, in a move made to meet the competitive wage conditions existing in the industry at that time and also to keep the wages of employees up to and in the forefront of competition, Chrysler Corporation announced that an unprecedented agreement had been made with the UAW-CIO for an immediate wage increase of 10 cents an hour for about 100,000 Chrysler employees. This agreement also provided a raise of 15 cents an hour for skilled employees, and a seven per cent increase for all salaried employees.

Following this voluntary wage increase, other important wage adjustments and increases in pension and insurance benefits occurred in the automobile industry. Again, in line with its policy of always seeking to pay wages and provide other benefits which compare well with those of automobile competitors, the company worked out an agreement with the UAW-CIO in December for a new five-year, non-reopenable contract which includes among other things an escalator clause, an annual improvement factor, new pension, insurance and vacation benefits, and provisions for a modified union shop.

In each case, wage, pension, insurance and vacation benefits awarded to employees in bargaining units were also put into effect for employees not represented by unions.

To keep pace with its increased activities during 1950, Chrysler added many thousands of employees to the payrolls and also increased the manufacturing floor space in its plants by over a million sq. ft. Included in this expansion were the addition of new body and engine-building facilities at the DeSoto Warren Plant, additions to the pressed steel and heat-treating activities at the Dodge Main Plant, and an extension to the fluid coupling building at Highland Park.

Ground was broken for a new 650,000 sq. ft. plant in Indianapolis, Ind., on October 12. This plant will measure 1020 ft. by 640 ft. and will be used for the manufacture of automobile transmissions. The company also has construction underway on new buildings or additions to existing structures at the Dodge Forge, Dodge Truck, Highland Park and Nine Mile Press plants in Detroit, and at its plants in New Castle, Ind., and Los Angeles, Calif.

What the coming year holds in the way of production rates for Chrysler Corporation remains to be seen. We realize that the future of our operations is involved in the industry-wide program now being worked out by Government authorities to integrate military production with a reduction of peacetime operations. It is to be expected that this will mean some reduction in production schedules for Chrysler Corporation. However, it also appears at this time that a substantial production of automobiles and trucks for the civilian market will be not only possible but probable.

We can probably do our best to cope with what might lie ahead by meeting today's problems today and keeping our organizations in the best possible condition to face tomorrow's problems when they come. As for Chrysler Corporation, it is encouraging to note that the company was never in finer shape to handle any demands the days ahead might bring.

HENRY FORD, II, President, Ford Motor Co.

FORD MOTOR COMPANY and its 142,000 people produced 2,000,000 Ford, Lincoln and Mercury passenger cars, trucks and tractors during the year 1950. The payroll totaled more than $5.9 million, the company spent $1.75 billion for raw materials, finished products, construction and services.

It was one of the best years in Ford history, with production and wages breaking all company records of the past quarter century.

Such figures now seem important only as they indicate the ability of the Ford Motor Company to do the job ahead of us all as we enter this decisive year of 1951.

We know that however the present situation may develop, increased American production —above or beyond any peace or wartime levels the nation has ever reached before— must be achieved.

Only by such production can we maintain our peacetime progress and at the same time strengthen ourselves to defend and protect this peace.

Ford Motor Company is, I think, in a better position than ever before to take on—with dispatch, efficiency and good heart—whatever its full share may be of the task immediately ahead.

A. E. BARIT, President, Hudson Motor Car Co.

IT IS A shock, of course, to Americans that we are faced with the necessity of again going into a mobilization program so soon after the end of a war which saw all of our people and all of our energy organized on a war basis.

While the present crisis is most disturbing and is uppermost in the minds of everyone, we in Hudson feel that, like many other organizations, Hudson is most fortunate in that it has men with the experience, know-how and ability to handle whatever part of the national defense program the Hudson Motor Car Company is called on to do. The same men head our organization and manage our various departments that handled the vast amount of war work Hudson was called on to do in the last war. In entering into a period where we may again be called upon for similar operations, we are fortunate that the people who will be assigned the task of

doing the job will be the people who handled it so well in the previous emergency.

The present situation will, without doubt, present some problems which we have not previously had. If partial mobilization is the order of the day rather than full mobilization of the previous armament program, new problems will present themselves. We are again fortunate in that as these new problems confront us, the experience and the background of those who will be called on to organize and do the job are provided with the ingenuity and the know-how to meet these problems, and to handle them efficiently and expeditiously.

We in Hudson feel that the safety and the welfare of our country are our responsibility. We recognize also that the responsibility is twofold. The first, quite naturally, is to use our facilities, our know-how, and all of our efforts to produce whatever defense material we will be called on to manufacture. We feel also that we can discharge our responsibilities by doing whatever is within our power to help maintain the economy of our nation by manufacturing needed civilian products and provide our share of full mobilization within the limits imposed by the present period. One of the main objectives of the forces who oppose us is to disrupt our economy and the winning of that battle may be of prime importance, too.

Hudson has set its goal and is preparing its operation to produce whatever defense weapons we are called upon to manufacture and at the same time help maintain a strong economy by keeping vital plants fully occupied within the limits of the defense program. Regardless of the task, Hudson stands ready and willing to stand its full share of responsibility in the defense of our country.

EDGAR F. KAISER, President, Kaiser-Frazer Corporation

GENERALLY speaking, automobiles reflect and anticipate public demand rather than establish it. Seldom are major changes put into effect on the gamble that the public will approve. Almost always, auto manufacturers cautiously follow the indicated needs, or desires, of the car-buying public.

Currently, public demand, as the auto makers are interpreting it, calls for greater utility and economy of operation, but without any sacrifice of riding comfort and handling ease. A hard taskmaker on all things, the public is especially demanding of the auto industry. People who have no fixed opinions on the relative merits of belts vs. suspenders, or the superiority of one make of television set over another, are prepared to argue into exhaustion their conviction that a certain automobile is superior (or inferior) to all others; that overdrive has everything over automatic transmissions (or that conventional is better than either); that a six is better than an eight (or that a four tops either), and so on.

The product of any one auto company obviously doesn't satisfy everyone, for in that case there would be only one make and model by now. But the public benefits by the intense effort of all companies to attain that universal acceptance. The result is that every year Mr. John Q. gets more and more of what he wants in an automobile and at the least possible cost.

The recent trend toward lighter cars of shorter wheelbase is a significant result of a growing public desire for waste-free transportation.

People have come to realize that automobiles need not be long and ponderous in order to be comfortable, and that they don't require big, gas-gulping powerplants to give good pickup and performance.

Accelerating this demand is the changing nature of our economy in the light of the re-armament program. People have less to spend for automobiles and they are demanding more economy and all-around transportation value from them. We feel that our new Henry J meets these newly emphasized specifications—that it is a well-balanced combination of weight, horsepower and wheelbase which establishes new peaks in roadability, fuel economy and performance.

Conceding nothing to bigger cars in appearance and pride of ownership, these well-balanced lighter models use less of the nation's precious supplies of steel and other strategic materials, and cost less to build. As a result they are in tune with growing requirements on the part of the nation for defense, and on the part of the public for a new peak in transportation efficiency.

HUGH J. FERRY, President, Packard Motor Car Company

INCREASING call by the government for raw materials to meet military program needs cloud the 1951 automotive forecast.

It is already evident that the year will see the automobile industry in a dual role—producing both military goods and new cars for the maintenance of transportation. But, this balance could be upset almost overnight.

Packard—long regarded as the "master motor builder" in the industry—stands ready to do its part. At this writing, we have received Navy contracts totaling $10 million for diesel engine developmental work, with others now being negotiated.

Our new 1951 models, well-described in MOTOR TREND's February issue, have won wide public acclaim. The Society of Motion Picture Art Directors has done honor to the 1951 Packard as the car "embodying the most advanced concepts of automotive styling."

Never, in the more than a half-century of company history, have our dealers and the public so enthusiastically accepted a new model as they have the 1951 Packard "200" —"300"—and Patrician "400."

The 1951 models, newly named, range in body choice from a three-passenger business coupe to a luxurious four-door touring sedan designed as the ultimate in fine motoring.

The 1951 Packard "200" business coupe restores this ever-popular model to the fine-car field. In addition, the 1951 Packard "200" is available in four-door and two-door six passenger sedans. The "200" Deluxe series includes the two- and four-door sedans, as well as soft-top convertible styling and a sports coupe "hardtop."

Packard offers the "300"—available in four-door sedans—as the "New Master of America's highways" and foresees the four-door Patrician "400" establishing a new standard of high fashion and beauty in motoring.

To produce these new cars and handle the government work, Packard is currently employing approximately 10,500, which is near peak employment except for wartime production.

It can be recalled that in World War II Packard produced 13,000 PT-Boat engines for the American and allied navies and 55,523 Rolls-Royce aircraft engines for five types of fighting planes.

Among the war's 100 biggest prime contractors for the government, the company stood 18th in dollar volume of contracts—and first in military output among the automobile industry's so-called "independents."

As Packard embarks on its 52nd year as a fine-car builder, its dealer organization never has been stronger—customer acceptance of the new 1951 Packard continues to rise—and the company stands ready to assist the nation's rearmament program in any way possible.

WARD M. CANADAY, Chairman of the Board and President, Willys-Overland Motors, Inc.

THE MILITARY'S olive drab paint once again is apparent along the assembly lines at Willys-Overland Motors, Inc., Toledo, Ohio, where in 1951 the manufacturing of Jeeps goes into its second decade.

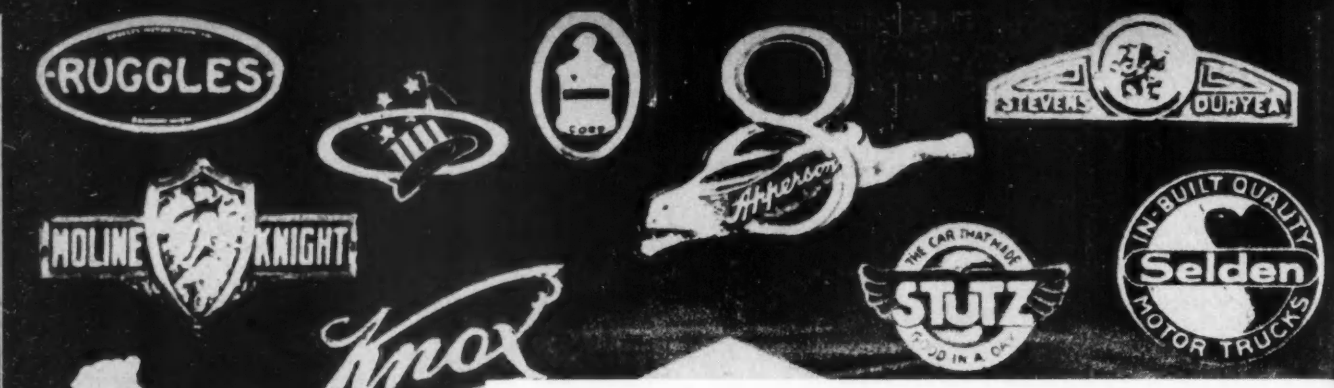
Famed for versatile performance during World War II, the four-wheel-drive vehicle in five years of civilian application has proved to be a vital addition to the range of commercial cars turned out by the automotive industry. More than 370,000 military Jeeps have been built by Willys for the Army, Navy and Marine Corps since the fall of 1941. More than 250,000 universal Jeeps in bright hues of red, yellow and green have been built for the civilian market since the end of World War II.

The civilian Jeep is considered essential to a wide variety of industrial jobs in forestry, on the farm, in oil well development, in mining operations and many other specialized fields. One recent survey revealed approximately one in every three civilian Jeeps in agricultural use.

While production of Jeeps for the nation's armed forces mounts in volume, Willys is maintaining output of the military vehicle's civilian counterpart to meet the needs of industry and agriculture. Both models are produced on the same assembly line. On a second assembly line Willys maintains production of its panel delivery, two- and four-wheel drive station wagons and trucks.

One of the government's 50 largest suppliers during World War II, Willys in 1950 completed a $35 million plant expansion and improvement program. In the event that the national emergency should demand all-out war production as in 1942, Willys-Overland would be able to exceed substantially its peak World War II rate of 10,000 Jeeps a month.

As 1950 ends, Willys has an order backlog well over $100 million, the bulk of which is for military Jeeps. Ample space is available elsewhere in the Toledo plant for military production other than vehicles. In World War II the company's contribution extended into extensive manufacture of shells, steel and aluminum forging, landing gears, aircraft fuel tanks, fuses, breech housings and recoil cylinders.



THIS CHANGING WORLD...

PROGRESS OF THE AUTOMOTIVE WORLD FROM 1920 TO 1951

by Lewis B. Simon

NOTE—This article concludes a four-part series on the evolution of the automotive industry from pre-Revolutionary War days up to the present time. The first article of the series (Dec. '50) covered news up to the 20th Century; the second part (Jan. '51) concerned the first 10 years of 1900; the third part (Feb. '51) covered the second decade; and this article discusses automotive news from 1920 up to now.—Editor.

IN SPITE of the nationwide depression, 44 new cars were inaugurated in 1920, not one of which is still alive today. This was the start of a decade that was to see many astounding innovations in automobiles —innovations that were to transform cars from the "horseless carriage" stage to acceptable and dependable modes of transportation.

In the first year of the second decade, the first production Duesenberg was built in Elizabeth, New Jersey. It had the first straight eight engine and the first four-wheel hydraulic brakes. The inside of the combustion chamber was machined, and the rigid crankshaft used discs instead of arms for crank throws.

Hudson produced the first body of the two-door coach style. Hupmobile introduced the annular clutch release bearing, and Parenti of Buffalo built the first American independent suspension; it flopped.

In 1921 the first Durant was made. One of its features was a six-in. diameter muffler, long and rigid to help stiffen the frame. Hudson offered the first adjustable front seat and Mack originated rubber engine mounts and rubber spring shackles. Cadillac had the first thermostatic control of carburetion. This year, nickel-plated radiators and lamps were becoming popular and a few more cars offered hydraulic brakes.

C. Harold Wills, who had played such an important part in developing alloy steels for Ford, brought out his own car, the Wills St. Clair. As would be expected, the new car showed a metallurgical virtuosity. The rims of the exhaust valves, exposed to high temperatures, were a tungsten alloy while the tip was chromium cobalt steel. The intake valves were of chrome steel. Wills was the first manufacturer to use an automatic fan release to allow the fan to slip on its shaft at high speed. The car's headlamps had a magnetic control to tilt the reflectors.

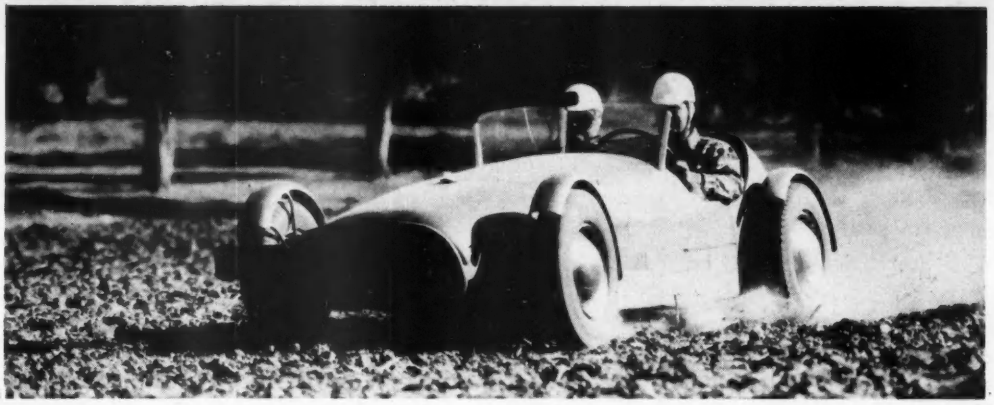
In 1922 William Crapo Durant brought out the Star in competition to the Ford. For an extra $95 the purchaser could have a starter and demountable rims. Then, Edward Vernon Rickenbacker brought out his entry, the Rickenbacker, which was a heavy car with an engine that had some interesting features: a divided flywheel, half in front of the engine and half behind (object, smoothness); machined and polished combustion chambers (aluminum head) to prevent formation of carbon; and an inverted cone clutch running in oil. This year balloon tires were introduced and a few cars even had the gas gauge on the instrument panel.

By 1923 cars were becoming reliable means of transportation. The emphasis was being placed on the problem of how to make it run smoothly, instead of how to make it run, while the news was shifting from new developments to new production records. This year was the first year that over four million motor vehicles were produced. Buick built its millionth car and Ford produced more than two million. Even though the undaunted promoter, W. C. Durant, introduced another car this year, the Flint, it was no longer easy. The days were fast going when anyone with a greasy wrench and a bold smile could start manufacturing cars.

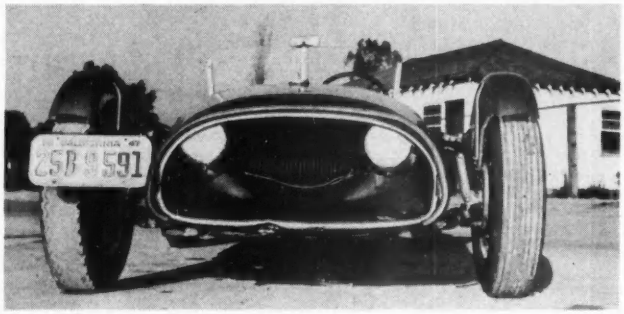
Nineteen twenty-four was the year of the advent of the Chrysler, produced by the Maxwell-Chalmers Corp. The first Chrysler featured a "high compression" engine, four-wheel hydraulic brakes, developed by Malcolm Loughead, and a replacement cartridge oil filter. News in the paint field was made when G. M. Research developed fast-drying Duco lacquer to replace enamel and varnish (which took 15 to 30 days to dry). Duco was first used on the Oakland.

Engines were now outgrowing their early characteristics. From a 500 to 1800 rpm range in 1900, the range now extended from below 100 to above 3000 rpm. A sign of the times was an ad of the Corcoran Manufacturing Company. They offered "Peerless de Luxe fenders for Fords—high crown, designed on graceful, sweeping lines"; and the

(Continued on page twenty-eight)



PHOTOGRAPHS BY E. RICKMAN



CANNONBALL'S excellent suspension is demonstrated by storming ploughed field at speed

THE CANNONBALL

NEWEST CAR IN THE SPORTS CAR FIELD

by G. Thatcher Darwin

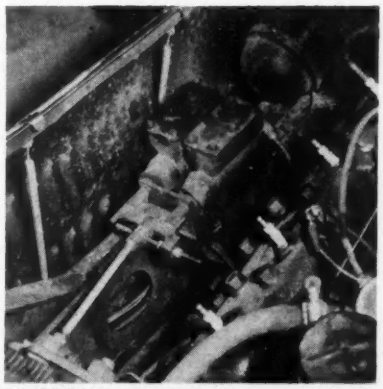
NEWEST "special" in sports car competition is the Cannon, product of the enthusiastic owner of a North Hollywood automotive engineering firm. In its road racing debut, the Cannon, driven by Jim Seely, placed third at the Pebble Beach meet, conducted by the Sports Car Club of America in November, 1949.

The Cannonball, as it was immediately nicknamed, features an unusually sturdy box-type frame, with independent coil springs forward and transverse leaf spring at the rear. The car combines excellent handling characteristics, with a degree of passenger comfort not often found in specials.

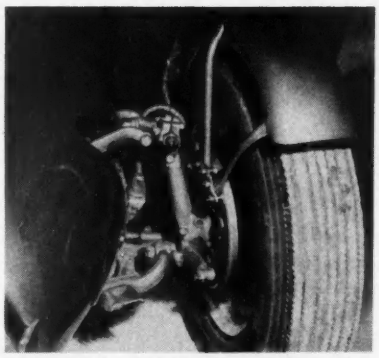
The engine is a Mercury, bored and stroked to 270 cu. ins., with milled heads and one of the owner's special ground cams. This partially modified set-up was intended only for testing chassis features of the car and not for racing. A more powerful engine will be fitted for the '51 season.

THE CANNON'S startling frontal aspect reveals enclosed lights and aerodynamic radiator opening. The bumper is a matching oval shape

The Cannonball is used by Ted Cannon for everyday driving and is a very creditable example of the growing numbers of specially built prototype sports cars which add so much color and technical interest to amateur events. Following its Pebble Beach success the car is sure to provide serious competition in Western events during the coming season.



OF SPECIAL interest is the Cannon's hydraulic braking system, with separate master cylinders for front and rear circuits. Connecting linkage can be adjusted from cockpit to vary brake pressure ratio between front and rear wheels



CYCLE-TYPE front fenders turn with wheels into recesses aft of radiator, permits full steering lock

SMOOTH rear contours conceal generous luggage compartment and massive box section roll bar. Trailer hitch is a practical, useful touch

MOTOR TRIALS

HUDSON HORNET FASTEST YET TESTED . . . 97.5 MPH

by Walter A. Woron

PHOTOGRAPHS BY E. RICKMAN

HORNET—if you take this name and Webster's explanation of same literally—is an apt moniker for Hudson's new high-powered six. It hums, buzzes, zooms and practically everything else any self-respecting hornet would do (except fly). And speaking of flying, the top speed of this car isn't far from approaching "take-off" speeds.

The Hudson Hornet is impatient—it wants to go, and runs best fast. It's powerful, is fast in the getaway, is easy to handle and gives a comfortable ride. There's not much more that can be asked of a car, except for personal tastes, price and upkeep cost.

The test car for this motor trial, a Hornet four-door sedan with Hydra-Matic transmission, was made available to MOTOR TREND Research through the Hudson Motor Car Company's Los Angeles Zone Office. The factory car, which was fairly well broken in (1332 miles on the odometer) was picked up for the two-day test from Wright & Beal, Hudson dealers at 1060 So. Figueroa St., Los Angeles, Calif.

Detailed Test Report

ACCELERATION: Although the Hornet is not a light car (3880 lbs.), the acceleration characteristics of the car are more than favorable. In fact, in the standing start ¼-mile department, it can give competition to the best of them. In all instances, except from 0 to 30 mph, we were able to improve acceleration times using the LOW range of the Hydra-Matic transmission, then shifting to DRIVE. In the standing start ¼ mile, we wound the car up to around 40 mph in LOW, then quickly shifted to DRIVE. This seemed to be the best shift point and gave the fastest elapsed time. Using this method we were clocking 70 mph at the end of the quarter mile.

Oddly, in the 0 to 30 mph checks, we found the DRIVE range to be faster than the LOW range. At these lower speeds, in LOW or DRIVE there is at least one shift (first to second gear in each case), but the shifting time seemed to be faster in the DRIVE range. The good acceleration time in the 30 to 60 mph check resulted from the fact that when the throttle was tromped on hard, the transmission downshifted to third. The same was true of the 10 to 60 mph tests, where the transmission downshifted to second gear before acceleration could begin.

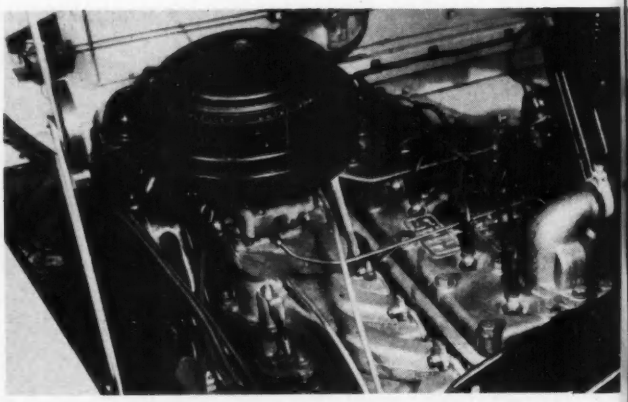
TOP SPEED: Not much need be said of a car that can turn an average top speed of 97.09 mph, which is the highest average speed yet turned by MOTOR TREND Research during a motor trial of any stock American production car. The Hornet is unusually stable at its top speed. On the car's fastest run, a clocked 97.51 mph, the speedometer was indicating 106 mph, which is not too great a speedometer error at these high speeds. (For speedometer correction, see Table of Performance.)

BEHIND THE WHEEL: Here you first get the impression that you're in a large car and you wonder if it's going to be hard to drive. But, as you step on the throttle and begin to move through traffic, you find that it is quite easy to maneuver and to judge distances (even though you cannot see the right front fender from the driver's position). There's plenty of leg- and headroom (38¾ ins. in front) and all operating controls are handy.

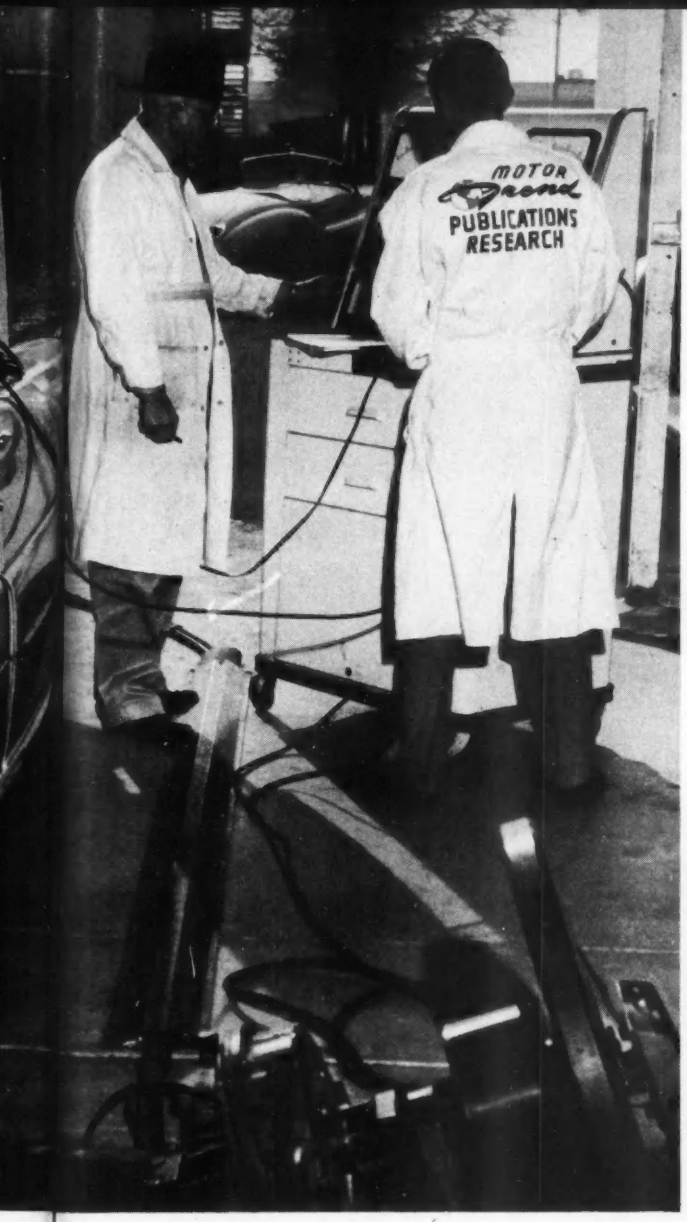
Two disconcerting features, however, one which was immediately noticeable and another which became evident after considerable driving on the open highway, are the speedometer location and the rear window distortion seen in the rear view mirror. The speedometer is on the far left of the instrument panel and is hard to see with your left hand on the upper section of the steering

(*Continued on page thirty*)

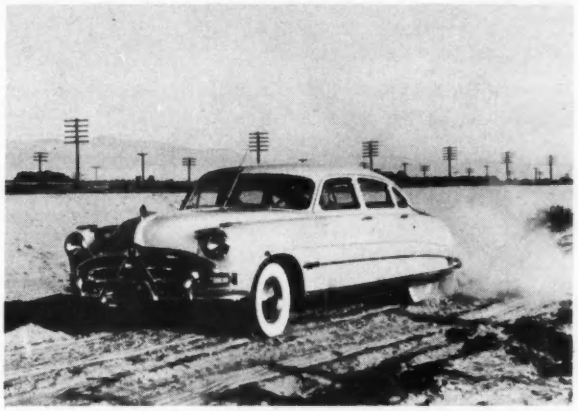
TRUNK compartment, though spacious and deep, does not have much height. Spare wheel takes up considerable room in this position, but it and bumper jack are accessible, as demonstrated by Don Francisco



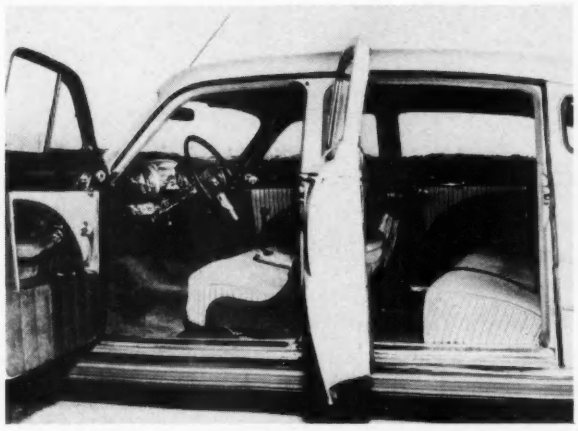
HUDSON Hornet engine is entirely new six, with more rigid and thicker cylinder walls. Engine is similar to other Hudson engines except that it has larger bore and longer stroke. The bottom end is also beefed up



IN DYNAMOMETER check at Clayton Mfg. Co., car delivered maximum of 90 road hp @ 3300 rpm @ 74 mph. This figure is net delivered hp at rear wheels, taking into account normal losses through transmission, differential and rolling resistance. Dynamometer unit is in foreground

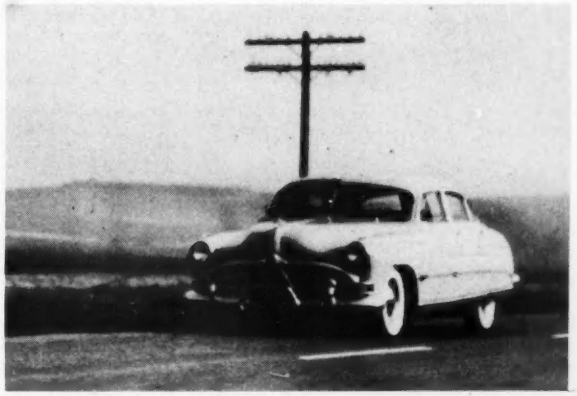


OVER DIRT, or bumpy asphalt roads, ride is comfortable. Car is very steady into turns, with only a small amount of body heel. Over dips at high speeds, car does not bottom. Not necessary to fight wheel on car tracks or on asphalt ridges. Hydra-Matic not at its best in dirt



LUXURIOUS interior includes nylon and Dura-fab upholstery, foam rubber seats, well-made appointments. Dash has considerable chrome, but not in location to cause glare. Top of dash now covered with plastic. Visors are well constructed and are adjustable to all positions

CHECKING rear tires for air or changing them could be a problem, except that rear skirt has been designed to fold down and can also be easily removed. Skirt is designed as a part of the fender panel



BRAKES of Hornet proved to be adequate, with stopping distances at high speeds being amazingly short. Hudson brakes are hydraulic, with reserve mechanical system to take over in case of hydraulic failure

SPORTS TRIAL...

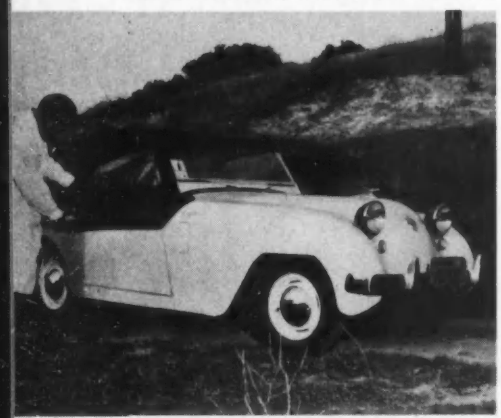
TEST OF CROSLEY SUPER-SPORTS FULL OF SURPRISES

by G. Thatcher Darwin

PHOTOGRAPHS BY E. RICKMAN

CROSLEY took bad roads in stride, demonstrating very satisfactory suspension and stamina

SEATING position is comfortable, and legroom surprisingly good. Large, plain instruments are easily read. Test car had heater. Accurate fuel consumption measuring device, used on all MOTOR TREND tests, is clamped to windshield



STANDARD side curtains make car weather-tight, are unzipped for opening doors (a new feature)

THE CROSLEY Super-Sports is the only mass produced sports car made in the United States today. In case the designation "sports car" conveys any impression that it is only a fair weather toy for well-to-do playboys, let me correct that notion right now. In addition to its sporting character, the Crosley is a perfectly practical machine for everyday knock-around use, requires no pampering and priced at $999, factory delivered, Cincinnati, Ohio, it warrants very serious consideration from the budget-conscious car buyer.

The car tested was the 1951 edition, and was provided by Ross Cumming, Inc. of Santa Monica, Calif., Crosley distributors for the Los Angeles area. I warned Jack Early, sales manager, that I would give the car the same thorough tests that all big cars undergo. He just laughed, invited me to "pull no punches," and said with a twinkle in his eye that "the car had some pleasant surprises in store for me." He was right.

The moment you slide in behind the wheel you sense that this car is cleverly designed, soundly constructed, and that driving it is going to be fun. Seating position is comfortable, visibility forward exceptionally good and controls are simple and well placed, except that I had to reach a bit for the gearshift lever.

The engine started on the first touch of the button, and after warming briefly, I took off. The engine is not silent, but I found its smooth, business-like tone rather pleasant.

Steering this car through traffic is a joy. The wheel is smaller in diameter than average; the action is extremely light even when the car is stationary, and the total wheel movement from full right to full left lock is only 2½ turns. Through heavy city traffic, I found it necessary several times to pull over and wait for our camera car to catch up. Without conscious effort on my part, the Crosley drew ahead simply because it could go places the larger car couldn't. The car's modest over-all dimensions give the driver a distinct feeling of confidence in close traffic. Once I deliberately "barreled" a corner on wet pavement to see what would happen. The car simply went where it was steered.

The riding qualities of the Super Sport are good. The car takes rough surfaces in stride and even washboard dirt roads don't cause any passenger discomfort. Springing is by semi-elliptics in front and coils in the rear with single leaves on either side to position the axle. The layout, although simple, seems generally satisfactory. In the writer's opinion, it could be improved by the addition of a sway bar at the rear, since the leaf springs do not seem entirely capable of handling side loads. One feature that contributes much to the Super Sports' good road manners is the positioning of the engine well back in the frame. Weighing the front and rear of the car separately revealed that with average load, the car is almost perfectly balanced at the center of its wheelbase. Here Crosley has definitely taken a page from a book of sports car design, and to excellent advantage.

The transmission is a simple three-speed box with a direct acting floor shift lever. There is no synchro mesh unit, and silent shifting requires a technique which, although different, is readily learned. During the test I thought several times that a four-speed close ratio box would have been an improvement, but after reflection I realized it would have added substantially to the cost of the car, and undoubtedly would have absorbed more horsepower than the simple type employed. The three ratios seem adequate for all around use.

The Crosley's performance must be measured relative to its engine size. In this light it is very good. Several times during the tests I thought to myself with admiration, "Can you imagine that this thing only has 44 cubic inches? Why, that's about the size of one cylinder in a big car!" For instance, I reminded myself of this while buzzing through a flying start quarter mile at a

(Continued on page thirty-three)

HARLEY J. EARL emphasizes lowness of full-scale model of Le Sabre. Body is only 36¼ ins. high at cowl, 50 ins. high with electrically-operated convertible top raised. In spite of this, ground clearance at lowest point is six inches

Sharp as a SABER

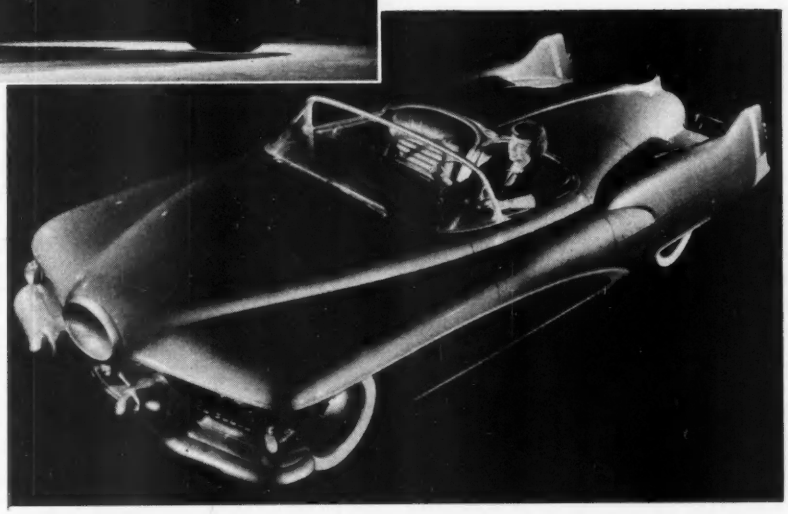
GENERAL MOTORS SPORTS CAR . . . LE SABRE

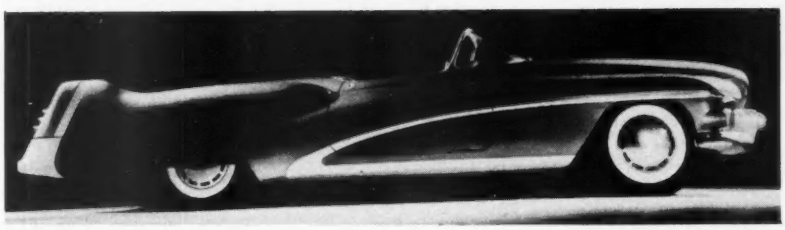
ANSWERING a burning question in the minds of all sports car enthusiasts, "Why doesn't someone build a production sports car?" General Motors has taken the first long step by building *Le Sabre* (shown here).

The only catch is that the car is an experimental model for the purpose of testing mechanical and styling ideas that GM designers have sketched on drawing boards and have discussed in conferences. The car, a custom-built two-seater, under development four years, is now being constructed and should be completed about a month after this issue of MOTOR TREND reaches the newsstands.

"The point of building this car," says Mr. Harley J. Earl, GM Vice President in Charge of Styling, "—is to be prepared for the future. This is the car of the future only in the sense that some of its design or mechanical features may appear some day in standard motor cars."

LE SABRE will be powered by an experimental V-8 supercharged engine, with 10:1 C.R., developing 300-plus bhp. Bore and stroke are square—3¼ ins., giving a displacement of 215 cu. ins. Total engine weight—500 lbs. The dual fuel system will use current premium fuels and methanol, which will be injected into combustion chambers at a certain level of speed range for extra power boost. A special Dynaflow torque converter is housed near rear of stationary driveshaft, just forward of differential. Rear brakes are located either side of differential, rear wheels being independently sprung. Top section of grille is part of lighting system. When lights are turned on, grille revolves out of sight and pair of close set headlights, fitted on reverse side of grille, swings into place. Beneath grille is air intake for the aluminum radiator





TOTAL weight of Le Sabre will be around 3000 lbs., giving it an expected power-weight ratio of 1:10. Wheelbase is 115 ins., overall length 200 ins., overall width at front fenders 76½ ins. Wheels are smaller than conventional (13 ins.), with brake drum diameter of only nine ins. To compensate for this, brakes are twin-shoe type to provide more braking surface. Front suspension is independent with special anti-dive feature for quick stopping. A 12-volt battery, in rear of car, and high-ampere-hour generator are needed to power electrical devices in Le Sabre

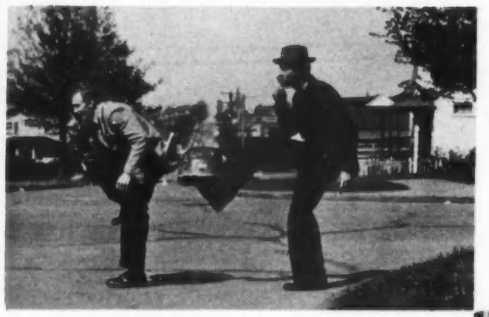
TWO SETS of three tail lights are on trailing edge of rear fins, operating as lights and directional signals, while backup lights are at base of fins. Twin tail fins have functional purpose—they house aircraft-type 20-gal. rubberized fuel cells, one for gasoline and one for methanol. Le Sabre has usual instrument panel gauges and dials, plus tachometer, compass and altimeter. Various indicators are illuminated from behind, while center group is lighted by fluorescent tube. Panel controls operate hydraulic jacks on each of the car's wheels so driver can jack up car, in event of blowout, without leaving seat. Driver's seat is adjustable through electrically driven screwjack. Besides warm air circulating system, car is equipped with thermostatically controlled seat warmers. Rear view mirror, built into corner of cowl, is below driver eye level. When top is raised, rear window acts as prism to focus rear view onto mirror or bring it into range

Care and Maintenance of Pedestrians . . .

IN A MODERN sense the definition of a pedestrian—one who journeys on foot—may be more accurately interpreted to mean a human being who, for the moment, is not behind the wheel of an automobile. Unlike the motorist, who is protected from the effects of his own miscalculations by a strong steel framework, the pedestrian has only his soft, frail body to ward off any abrupt contacts with a passing automobile.

Certain areas are marked off into sidewalks wherein the person on foot is free to blunder about in whatever erratic manner he chooses. But when his path parallels, crosses or otherwise intrudes on the lanes designated as the rightful property of the motorist, there are various rules and regulations which try to guarantee that the pedestrian will still be a useful member of the human race. Also that he will be able to navigate on his own two feet when he re-enters his own domain on the other side of the street.

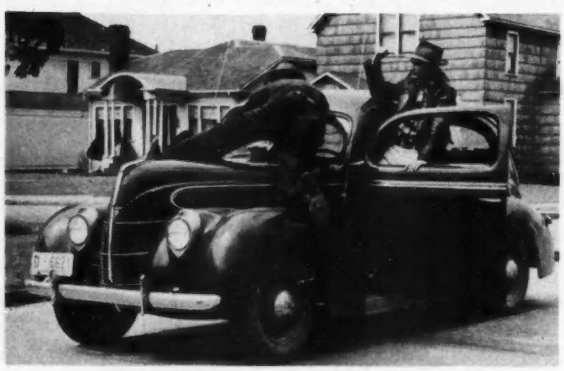
Care and maintenance of pedestrians is the problem not only of those who walk, but of equally vital concern to those who drive. Pedestrian and motorist alike are of the same race, even though the car driver does get there faster. And, after all, a motorist can't very well bag a couple of pedestrians, carry them proudly home on his fender, and deposit them in a cold storage locker. It's too cannibalistic!



1. IT IS generally conceded (left) that pedestrians should have the right of way at intersections, but the sight of a human being in the middle of the street attracts some motorists like a magnet. Therefore it might be a good idea to sneak quietly across the street, hoping that no motorist will spring out before the other side is safely reached. Shhh! !

2. CROSSING a quiet intersection is rather boring (right), but let the pedestrian relax his vigilance the least bit and lo—an automobile will challenge his progress. When a crossing of their paths seems imminent, there arises the never-ending question—who has the right of way?

3. THE DRIVER may rise to meet the question of who is in who's way (below) and what's to be done about it. He might even offer the street-crossers a lift to their destination, which will, of course, end their status as pedestrians—but on the other hand he may not be inclined to co-operate at all.



4. THERE are more ways than one (above) to overcome an immovable object with an irresistible force. Over, under, or through—pedestrians must reach their objective.

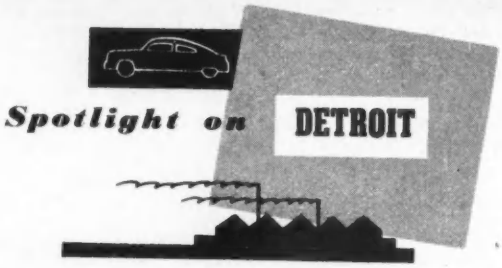
5. A WEED of joy to rem ever. Cars d been wa refu is left w outh

Text and Photos by Eric Wahleen

5. A WELL-ED pedestrian (above) is a thing of joy to be remembered by the motorist forever. Contrast his departure when a decision has been wrongly referred, even though the motorist is left with mouth agape and doors wide open.

6. **PEDESTRIANS** will seldom be able to outrun an automobile, but they can try (above). Under such circumstances the dashing interlopers will resemble antelopes, and with the angry clash of gears to speed them on their way, they are considered fair game. Of course, as long as they stay on the highway they are expected to adhere to all traffic regulations.

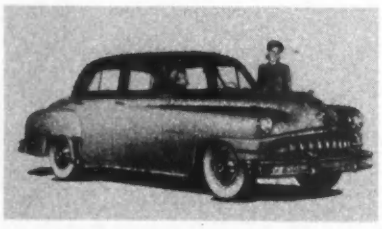
7. **THE QUESTION** of who has the right of way can be ended abruptly if the pedestrians take to tall timber (right). There they can catch their breath and perhaps look down upon the motorist as a low character who has no regard for the welfare of his fellow man. Later, on a more down-to-earth attitude concerning their rights as pedestrians, they may keep an equal footing with the motorist. After all—they might have knocked all the paint off his fenders. . . .



Automotive Industry in One of Its Most Critical Periods

by Harry Cushing

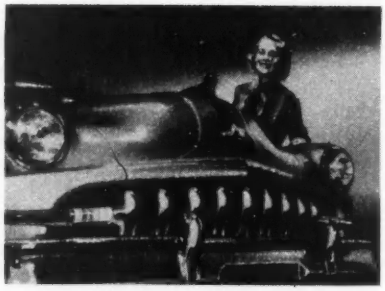
DETROIT, MICHIGAN—As war clouds gather throughout the world, America's dynamic automotive industry is plunged into one of the critical periods in its history. It is a time of acute uncertainty. Rapidly changing conditions and new developments tumble into the motor capital with each tick of the clock. . . . No one here will look any more than 24 hours ahead, and then, any talk of the future is carefully hedged. This great industry does not know where it is headed, and at this time nobody seems to be in a position to point the way. Thus, anything a Detroit columnist attempts to write a month in advance of publication is very likely to be outdated by the time the periodical reaches the newsstands. It is presumptuous to talk positively about conditions here, and it is dishonest reporting not to warn readers of MOTOR TREND in advance. . . . Against this background, then, there are certain basic problems confronting the automobile industry which threaten to be on hand for some time. These are: (1) The price and wage controversy which finds management and labor united; (2) availability of materials; (3) serious unemployment dangers; (4) and finally, the actual role the industry is expected to take in the building of weapons. . . . Of all the roadblocks ahead, the latter is one of the most perplexing. So far, there are no indications that the industry has had its full defense production job spelled out by national authorities. Some observers suspect Detroit's automobile industry will not be called upon to play as decisive a role as it did in the last war. They reason that the atom bomb has called for dispersion of manufacturing operations for greatest national safety. Automobile making in the motor city is a very highly concentrated operation. Others are equally certain that plants will get all the war orders they



DE SOTO features increased power, comfort

can handle—in time. They figure many other factories throughout the country will get larger war assignments than in the past to compensate for possible bombings here. . . . Latest military contracts, totaling $260 million, have been awarded to General Motors and Chrysler. Medium tanks will be built by Chrysler in an arsenal to be constructed at Newark, Delaware. GM will turn out 2½-ton trucks at the GMC Truck and Coach plant in Pontiac, Michigan. With these orders the automotive industry holds defense contracts with an estimated value of $550 million. By contrast, when the United States entered World War II on December 7, 1941, the automotive industry held military contracts valued at about $4 billion. At the height of that conflict weapons were coming off automotive assembly lines at a $1 million-an-hour-rate. Thus, many in Detroit are anxiously awaiting to find out what the motor capital's all-out war job will be and how soon the city will be called upon to do that job. . . . General Motors has signed a military contract with the Air Force to build F-84 Thunderjets. Manufacturing will be done in the firm's Kansas City plant and will not seriously hurt production of new cars, according to C. E. Wilson. Value is not yet known.

PRICES AND WAGES: Both management and labor feel the government's recent mandatory rollback of car prices to December 1 levels is discriminatory and arbitrary. Labor fears the action, coupled with wage freezes, will completely upset its hard-earned escalator contracts whereby the size of auto workers' pay checks are tied to the cost of living index. It is using every weapon in its arsenal to convince the government of this fact, and to protect the five-year agreements now covering nearly 900,000 workers in 60 com-



DODGE'S redesigned front end shown here

panies. . . . Management feels the industry has been singled out as an example to the rest of the nation. They assert the government is not taking into account recent price rises in materials and labor. General Motors says that during 1950 its prices for materials rose from 7 to 300 per cent, and labor costs went up 11.13 per cent. They ask the government to weigh these figures against their proposed five per cent price hike. . . . Ford states that its prices for materials, supplies and wages have gone up at the rate of $103 million yearly. Both firms underscore the fact that government-produced rubber has increased in price from 12 per cent on one grade to 32 per cent on another. . . . The industry feels that governmental price control action implies automotive companies are responsible for inflation. It does not attack the basic problem at its source, they claim.

MATERIALS: In the opinion of Henry Ford II, automobile production will be slashed as much as 50 per cent this year from record-breaking 1950 levels. Channeling of materials into military production is the chief cause, the motor executive says. . . . Whatever happens, however, you may wager that the chrome glitter on the new cars will disappear as the year wears on. With aluminum, copper, nickel, zinc, cobalt, cadmium and other non-ferrous metals already under governmental control, cars should look much more somber by mid-summer. This fact is borne out by the National Production Authority's recommendation for the elimination

NEW CADILLAC looks longer, lower than ever

of copper in bumpers, trim, hub caps, windshield wipers, horn buttons and rear view mirrors. The NPA also has recommended curbing the use of aluminum in windows, seats and trim. . . . Elsewhere, more synthetic materials will be used in car tires this coming year. The recent 28 per cent cut in natural rubber for January and February points up this situation. Once again drivers are being urged to recap worn tires as a conservation measure. . . . Material shortages have hit hard at Studebaker, where production has necessarily been slashed 20 per cent.

UNEMPLOYMENT: Curtailment of these essential materials for civilian production, plus government delays in placing military orders here may add up to mass unemployment for Detroit, auto authorities feel. So far only about three per cent of the industry's productive capacity is devoted to defense work. The prospect is for 10 per cent by next September. Unless the government speeds up the awarding of contracts, thereby offsetting declining passenger car output, sources here estimate as many as 100,000 will be out of work by that time. . . . Management and union officials at Ford, for example, predict that by spring nearly 40,000 workers there will be laid off under present conditions. The cut in aluminum is the principle cause, since Ford uses aluminum pistons and believes it will take up to 14 months to convert production processes to other materials. . . . Nash already has furloughed nearly 5,000 employes because of "government restrictions and material shortages." Simultaneously, the firm has cut 1951 manufacturing schedules by 25 per cent. . . . Even if defense orders should suddenly begin to flow into Detroit

PLYMOUTH'S increased riding comfort stressed

in overwhelming quantities the unemployment threat would not slacken for some months. Once conversion begins, 3 to 12 months is needed to tear down a peacetime operation, set up a war production plant and get volume operations underway.

NEW CARS FOR 1951: Despite the uncertainties it faces, the industry is going right ahead with new car introductions. This month "Spotlight" looks at four 1951 models. . . . *Cadillac* is still as distinctive and luxurious as ever, and styling changes emphasize a long, low look. Redesigned front ends and new rear features contribute to this appearance. On the outside, front bumpers incorporate a new flare design, with larger integral guards. Other characteristics are open grille extensions, modified circle headlamps and broader hood emblem. Interiors, from dashboards to upholstery, also have been spruced up. One big feature which will appeal to nearly all motorists is a defroster vent for rear windows. Cadillac's V-8 high-compression engine, installed in over 200,000 cars, has a number of refinements which should increase mileage. Hydra-Matic transmission is standard on all models. . . . *Dodge* presents a car with a number of striking styling changes as well as important engineering advances. From the appearance standpoint, Dodge offers a redesigned front, featuring larger bumpers and guards, an entirely new grille, and reshaped hood and fenders. Mechanically, the cars are introducing "Oriflow" shock absorbers, which L. L. Colbert, Chrysler Corporation president, terms: "a major advance in automotive engineering." Although operated hydraulically as in conventional shock absorbers, "Oriflows" have an entirely different design. Piston and valve components have been reduced from 18 to 8, and it is now almost impossible for axles to come into jolting contact with the rubber bumpers on frames when large bumps are encountered. Test drivers find the new shocks

EXTERIOR and interior changes in '51 Dodge

permit safe driving at 50 mph on roads that normally throw cars out of control at 30 mph. Other improvements include better vision for drivers, refined interior styling, glare-protected instrument panel, and a more efficient engine cooling system. . . . *Plymouth* for 1951 also stresses greatly increased riding comfort, together with numerous styling advances and added safety features. One of its big mechanical features is "Safety-Flow Ride," made possible by the use of Chrysler Corporation's new shock absorbers. Other changes include electrically operated windshield wipers, pressure-vent radiator cap, which is adjustable to varying atmospheric conditions, improved engine cooling system and a more powerful generator. Exterior lines have been beautified. An appearance of massiveness combined with smart streamlining is achieved by a new grille, redesigned front fenders and hood, wider windshield and a larger rear window. The new Plymouth is again powered by a six-cyl. 97-hp engine with a 7:1 c.r. All models have combination ignition and starter switch, automatic electric choke, super-cushion tires, large hydraulic brakes and safety-rim wheels. . . . *DeSoto* announces sweeping changes in exterior and

MASSIVE new grille apparent on Plymouth

interior styling, new riding comfort, exceptional safety features and increased power from a larger engine. Like other Chrysler Corporation cars, it is equipped with Oriflow shock absorbers. Exterior changes include a new grille, wider hood, new front fenders, new crest-type front end ornament, rear fender mouldings placed lower on fenders, and a belt moulding completely encircling the car. Length of DeSoto is accentuated by a new top fender line that extends further back on the front door panel. Visibility has been increased front and rear by widening the windshield, narrowing front corner posts, sloping the hood and fenders forward, and increasing rear window area by 88.7 sq. ins. Horsepower for the 1951 DeSoto engine has been stepped up to 116. Displacement has been raised from 237 cu. ins. to 251. Improved engine starting and smoother operation during warm-up are assured by a new automatic choke built into the carburetor. The mechanism is also better protected from dust and dirt. In addition, the engine is waterproofed throughout for fast starts and continuous operation in the wettest weather. . . . *Chrysler* is one of the last concerns to introduce its new models, and at press time had not released information about them. Two major engineering facts are generally known in Detroit, however. The first is that the long-awaited V-8 engine will be unveiled, and the second is the introduction of hydraulic steering, expected to be featured on the Imperial and Crown Imperial lines. Under development for 20 years by Gemmer Manufacturing Company, the new steering device will be known as Hydraguide. It is said to be the first successful power gear designed especially for passenger cars. Among many advantages claimed for it are reduction of driving fatigue since wheel movement is cut 40 per cent; about 80 per cent less effort needed for parking; elimination of road shock since there is no vibration; and as a spectacular safety device, taking over control of the car when a tire blows. Those who have tested Hydraguide report that when a car is parked only one finger is required to spin the wheels.

SPECULATION: Hydraulic steering may be the forerunner of a number of startling engineering developments in the motor car of the future, according to a reliable chronicler here. While the principle of hydraulic control of motor vehicles is not new, Chrysler's application shows it to be practical at last in the passenger car field. Carrying hydraulic control to its logical conclusions, it now becomes possible to operate a car entirely by pushbuttons. As a result, tomorrow's car may eliminate steering wheels, an advance which will open new styling possibilities. Up to now, steering wheels have been more or less the one unchangeable unit in a car with which designers had to contend. . . . A way off in the future is the prospect of a new era in highway safety as the result of hydraulic control. Imagine a super highway, like the Pennsylvania Turnpike, spotted with control towers. Attendants have before them a panel of buttons tuned electrically to the hydraulic controls in cars using the road. A simple push of those buttons starts and stops cars as traffic conditions dictate. It *is* possible, our source contends.

ODDS AND ENDS: One of the casualties of the Korean War is the big national automobile show scheduled for Detroit this summer. The industry has called it off because too much manpower and materials would be required to stage the type of show envisioned. . . . Rumors are prevalent around Detroit that Kaiser-Frazer may soon announce a sizable war contract. The company is known to be studying the possibilities of building aircraft, and of utilizing a portion of the huge Willow Run plant for this purpose. Car manufacturing will not be affected. . . . Official production totals for 1950 have not yet been announced, but estimates show the auto industry exceeded the coveted goal of 8,000,000 units. It is the all-time mark, and one not likely to be beaten for many years to come. . . . Ford Motor Company has begun an unprecedented expansion program. During the next three years the firm will spend $1 billion, unless national mobilization denies necessary materials. . . . According to David A. Wallace, president of Chrysler Division, a new car today costs less than half its 1940 price in terms of wealth in the cattle country. Ten years ago it took 24 head of cattle to buy one of his company's cars. Now it can be done with the proceeds from the sale of nine head, Mr. Wallace says. . . . Ternstedt Division of General Motors has been awarded an $8 million defense contract for fire control instruments. About 2,000 people will be employed. The firm makes hardware for GM's passenger cars. . . . A new ambulance for civilian defense projects, police, hospital and other first aid uses is announced by Chrysler. It is a combination of Chrysler's Town and Country station wagon and a versatile emergency unit. Standard equipment on the vehicle are collapsible stretcher-cots, roof-mounted flasher, siren, and other regular items found in Chrysler's Royal line. . . . Chrysler has begun construction of a new engine plant costing $15 million. Located about 25 miles southeast of Detroit, the factory may build the company's V-8 engine for the various divisions that will use it. However, the structure may be turned over to military work if the government requests it. About 3,000 people will be employed in the plant when manufacturing gets underway.

PLANT VISITORS WELCOME: Would you like to tour an auto plant on your next trip to the Motor Capital? Thousands of visitors to Detroit do each year, and they find it one of the exciting sights in the United States. The various companies spare no effort to make such tours interesting, and to provide for the comfort of their out-of-town guests. Plant tours are personally conducted by trained guides and arranged so that visitors see raw materials arriving at one end of a factory and finished cars or trucks being driven away at the other. . . . Pontiac and Kaiser-Frazer operate specially-built trains on their plant tours. At Pontiac four trips daily are made with a 27-passenger vehicle just recently placed in service. The trip covers 2½ miles and lasts more than an hour. K-F also offers four daily trips, and visitors see the huge Willow Run plant from the comfort of an electric train. . . . At Ford Motor Company glass-topped buses carry visitors to various points of interest in the gigantic Rouge area. The buses run every 30-minutes throughout the week. . . . Trips also are available to Detroit visitors at Hudson, Dodge, Chrysler, Plymouth and Packard. In Flint, Michigan, Buick and Chevrolet make provisions for guests as does Oldsmobile in Lansing, Michigan. Nash plants in Kenosha and Milwaukee, Wisconsin, are open to the public.

THE SPORTING SCENE

IN TWO DAYS running, the 840-mile course (90 miles longer than the one selected for 1950) chosen for the 1951 Mobilgas Economy Run to the Grand Canyon, will subject the cars to every sort of altitude, weather and driving condition that the average motorist would encounter in a full year of driving. . . . Conducted under the rules and sanction of the Contest Board of the American Automobile Association, the 1951 Run will be held on March 6 and 7, and will again run from Los Angeles to the south rim of the Grand Canyon via Death Valley and Las Vegas. . . . A change that will make the 1951 Mobilgas Economy Run even more comprehensive than its 1950 predecessor is the lengthening of the course by adding two segments. The first takes the cars over Highway 6 via Mint Canyon from Pasadena to Vincent instead of over the shorter Angelus Crest route. The second change in the course is from Furnace Creek Inn down to Shoshone in Death Valley and back up to Death Valley Junction instead of across the short, straight route between the inn and the junction. . . . Cars are being picked by the American Automobile Association contest board officials from warehouses, assembly lines, dealer showrooms or anywhere else they may choose. This is being done without advance warning to ensure that entries in the 1951 Run are strictly stock models. . . . The entry list in this run is open to any stock, current model car of U.S. manufacture and design with a front wheel tread of not less than 53 ins. The car entered must be a current, 1951 four-door.

ART STREIB

DURING a test run over the official course of the 1951 Mobilgas Economy Run, General Petroleum Corp.'s specially equipped laboratory test car is pictured at Bad Water, 279.6 feet below sea level. From this lowest point in the western hemisphere, competing cars climb to finish line at south rim of the Grand Canyon

metal-top sedan (two-door model acceptable to A.A.A. if manufacturer's line does not include a four-door sedan), not driven more than 5000 miles. . . . Official competition rules of the 1951 Mobilgas Economy Run, as established by the contest board of the A.A.A., require strict adherence to all traffic laws and regulations in all states, cities, towns and government reservations. Observers in each car and state highway patrolmen stationed along the route will supervise the compliance with regulations.

★ ★ ★

WHEN DRIVERS ARE introduced at any Northern California race the applause is generally rather restrained until local boy Fred Agabashian's turn comes—and then the house invariably explodes with cheers. Freddie is a cautious driver today, but has always been wonderful to watch in action, and this fact, plus his unfailing good sportsmanship, has given him great popularity since he first began running modified stocks in '32. Freddie has just been named manager of the Bay Cities Racing Association, and director of the Pacific Coast Indoor Racing championship events that are about to start in Oakland. With this new responsibility, Agabashian will retire from all competition driving with the exception of the Big Car class. He's been assigned the Kurtis-Kraft Wynn Friction-proof Special for this year's 500. . . . As this issue reaches the stands, advance sales of Indy Memorial Day tickets should have set an all-time record. The '51 installment promises to be the fastest 500 in history, the biggest single factor in boosted

GRIFFITH BORGESON

FRED AGABASHIAN, one of the most popular figures in West Coast racing history, has just been made boss of Bay Cities Racing Association, will confine future driving to the Big Cars

lap speeds being the new Firestone racing tire, for which a bonus of from three to five mph is claimed. These new tires were first used at Darlington, by every competing car but one. Stockers and bikes have burned up tires at a furious rate on this track in the past, but not a single hoop was changed during the 200-miler and Parson's tires showed only 10 per cent wear after the race!

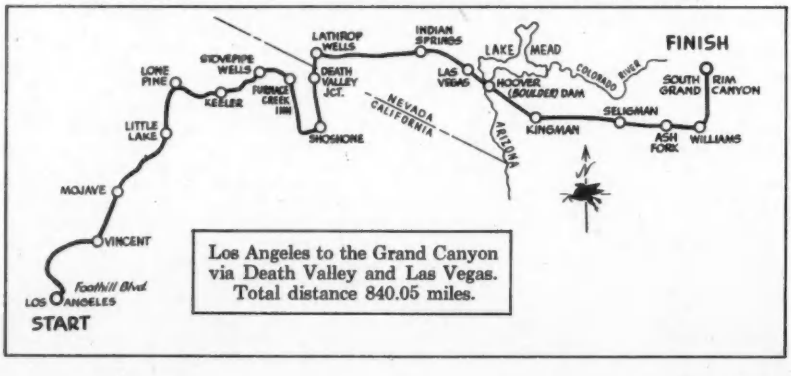
★ ★ ★

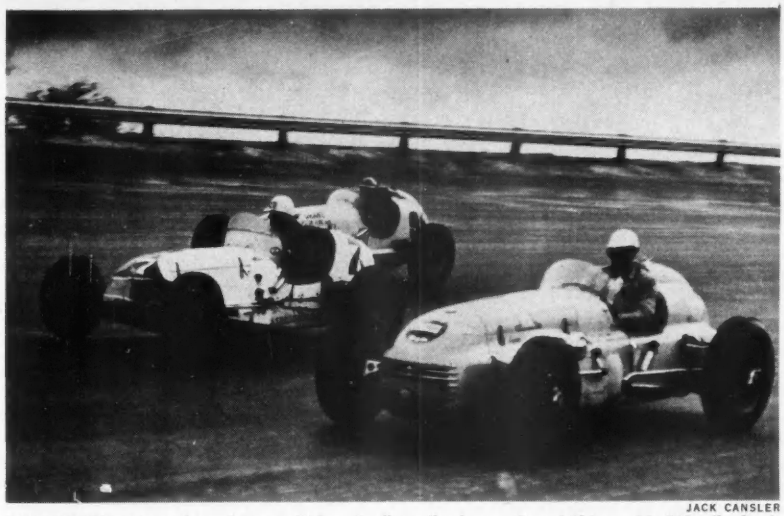
500 CC FANS will want to contact Major R. D. Seddon, 147 West 54th St., New York, who will import 500 and 1100 cc racing jobs if sufficient enthusiasm seems to exist here. The cars' price—something under $2000 is anticipated—pretty well guarantees a wide potential market. The performance of these more or less scaled down G.P. jobs is definitely staggering and, as it looks from here, there's only one obstacle to their acceptance here: you can use a sports car for transportation and be moderately content with the relatively few competitive events that take place in a typical season. A full racing job is another matter; events are too widely separated in time and space to encourage potential drivers to dive wholeheartedly into this branch of the sport. When road races are as commonplace on the American scene as they are on the English we can expect proportionate popularity of cars marked "for competition *only*." But bring on the midgets, include them in every sports car event!

★ ★ ★

THE YOUNG MIDWEST Sports Car Club of Chicago is off to a dazzling start. The group is now negotiating for the purchase of a 121-acre site ideally suited to road-racing, hill-climbs, and other forms of recreation on wheels. The estate has several buildings that can be converted to clubhouse and garage use and the terrain offers a wide variety of road conditions, including Nurburgring-esque ups and downs. If you're located in the Chicago area and would like to see such a dream come true you may want to put a shoulder to the club wheel; the address is 6215-A Diversey St., Chicago 39. . . . *Patria chica* notes: Florida's S.C.C.A. has as its unofficial emblem the Confederate "Stars and Bars" flag. Which promptly reminds one of the Fords now emanating from the Lone Star State bearing window stickers that say "Made in Texas, by Texans." Who will be the first humorist to paste one of these on his MG? . . . George Huntoon (Fla. S.C.C.A.) suggests modification of MG lube systems after close observation of their behavior at last year's 12-lap charity sprint at Opalocka Speedway. The oil sump suction line in MGs is located on the left side. If oil supply is at normal or lower, prolonged counterclockwise running at speed on a tight oval will cause the oil level on the left-hand—suction—side to recede sufficiently to starve the pressure lube system, resulting, among other things, in a ruined crankshaft and bearings, as happened to one unfortunate at Opalocka. . . . Mention of the Los Angeles Foreign Car group made in these columns recently brought that club bales of mail, many new members. Membership has now passed the 175 mark, cars include Aston Martin, Bugatti, Talbot, Triumph, plus the more frequently seen overseas jobs. Eight big events are planned for the '51 season, which got rolling with a January gymkhana. . . . Sebring, Florida, was the setting of one of America's most exciting road races on Dec. 31. It was a six-hour event, run to strict Le Mans regulations, with the splendid Sam Collier Trophy going

COURSE — 1951 MOBILGAS ECONOMY RUN





JACK CANSLER

DARLINGTON victor Johnny Parsons (7) laps Faulkner (background) and Chitwood in 200-mile classic

to the winner. Cars of every category ran simultaneously, each stood an equal chance because of careful handicapping. An unusual touch and one that did the most to add Le Mans flavor was the running of half the race after dark. Next month's MOTOR TREND will cover the meet in detail.

★ ★ ★

LETTER JUST RECEIVED from cosmopolitan racing enthusiast Bob Moore of Modesto, Calif., states casually that he just received an urgent request from Hans Stuck to rush him entry information on the Pikes Peak run. Will the great Auto Union champion be over here with one of the new V-8 two-litre Kuchen-engined A.F.M.s?

★ ★ ★

BIG CAR CHAMPIONSHIP suspense was considerably altered by the results of the Bay Meadows AAA 150-miler. The season had been one of the most uncertain, unpredictable, and exciting in many decades of American racing, but the Meadows go—with only Darlington left—left little doubt that 1950's National Champion would be one of three giants: Faulkner, Banks, Bettenhausen. Faulkner had had a good season, won the Milwaukee 200-miler, placed consistently close to the top in other races, led after Bay Meadows with 1217 points. Henry Banks was right behind Walt with 1110 points, a record of good performance throughout the year, and a win from the Detroit 100-miler. And Bettenhausen had 1027.5 points, had taken both the Milwaukee 100 and the Meadows 150-miler. Such a close-fought battle assured a gigantic migration to the season's windup event—the 200-miler at Darlington, with 400 points at stake for the winner, guaranteed $20,000 purse. The field of 26 starters included '49 National Champ Johnny Parsons just by the skin of his teeth (an airplane breakdown had brought him to Darlington a day late and his car was turned over at the last minute to Joie Chitwood). But, just to make this drama better than fiction, when Paul Russo heard of the spot Johnny was in—carless once again—Russo decided to give his recently injured shoulder a rest, turned his car over to Parsons. And, driving a strange car, Johnny Parsons started in sixth spot, drove like fury to take the lead in the fourth lap, sailed on to improve his position steadily, lap the field, and win the 200-miler without a pit stop! He averaged 104.65 mph, covering the 200 miles in one hour, 54 minutes, 47.24 seconds. It was a real Hollywood ending to a frantic season for Johnny of Van Nuys, who won last year at Indy, then went almost the entire season without a car that would go, plagued by every sort of rotten luck. And then, just when things look blackest, our hero *borrows* a car and hurls it to victory! Bill Schindler drove a steady race to place second, after having made fastest qualifying time of the day, 110.837 mph. Banks came in third, earned enough points to give him the title of National Champion for 1950. Faulkner placed eighth and Bettenhausen, who lost five laps because of mechanical trouble, wandered in twentieth. So, with history's most hectic season a thing of the past, here are the top 1950 AAA Championship point standings:

Henry Banks, Compton, Calif.	1390
Walt Faulkner, Long Beach, Calif.	1317
Johnny Parsons, Van Nuys, Calif.	1313
Cecil Green, Houston, Texas	1190
T. Bettenhausen, Tinley Park, Ill.	1027.5
Duke Dinsmore, Dayton, Ohio	1017
Paul Russo, Indiana	928
Chuck Stevenson, Fresno, Calif.	760
Jack McGrath, S. Pasadena, Calif.	736.5
Bill Schindler, Freeport, N.Y.	690

★ ★ ★

AN OVERSEAS CHAPTER of the MG Car Club—the U.S. Mid-Western Centre—was recently formed at the Chicago showroom of S. H. Arnolt, Inc. Several unusual plans are underway: an executive committee formed of four *women*; utilization of the club's MGs in some sort of defense measure; and year-round activities. An invitation to join the club has been extended to MG owners throughout the midwest states.

★ ★ ★

AN INVITATION to conduct a road race for charity extended to the San Francisco Region of S.C.C.A. (mentioned here last month) by the Los Gatos, Calif., Junior Chamber of Commerce, has been accepted, the course surveyed by club officials, and late March selected for the event. The circuit is three miles long, runs over roller-coaster-style paved roads through the Santa Cruz Mountain foothills, has been pronounced ideal by the club's executives, who were responsible for the smooth conduct of the Pebble Beach meet. Participation in this event by other regional groups is invited, and information can be had from Kjell Qvale, 214 Van Ness Avenue, San Francisco. Qvale has recently been elected Activities Chairman of the club. The other new officers: Bill Breeze, Regional Executive; George Rosenblatt, Secretary-Treasurer.

—G.B.

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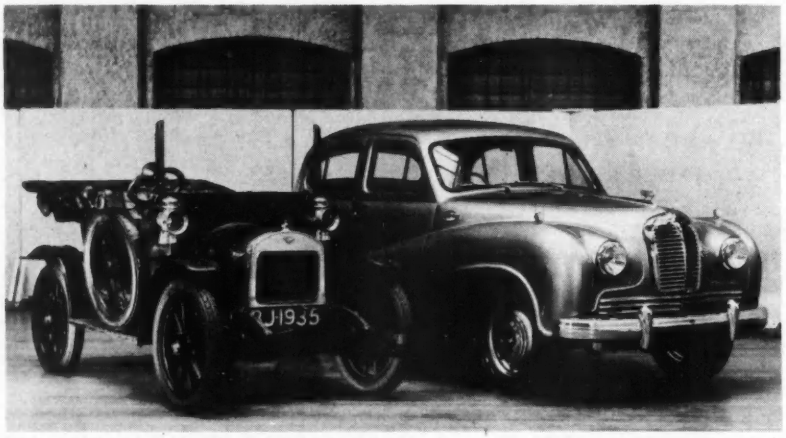
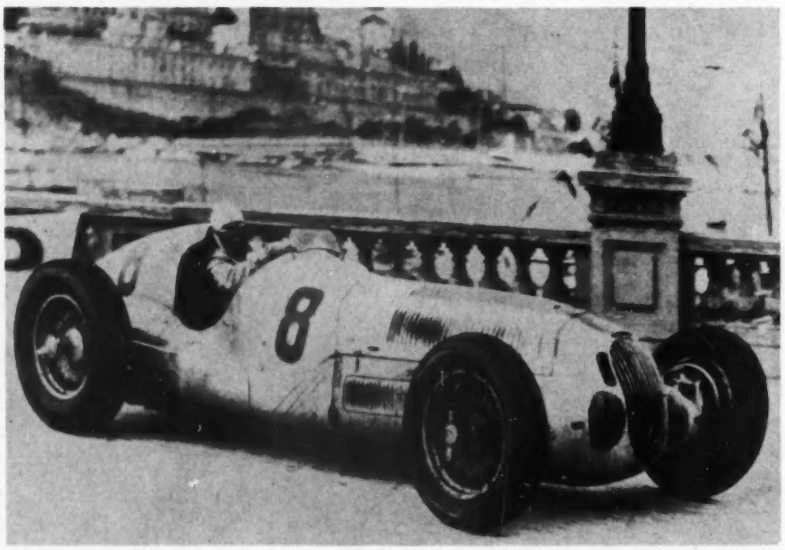
TRENDS IN WORLD CAR DESIGN

by A. Devereux

WORLD TRENDS, 1951: These lowest common denominators can be quickly detected in British and Continental car design: minimum wheelbase, almost always a forward-mounted engine of minimum dimensions and displacement, maximum passenger and luggage space. That's the rough outline of the common man's car, and there are many variations practiced, and even more possible, within it. . . . To date the enthusiastically-heralded unit construction of body and frame has failed to replace the traditional separate, rigid frame. This latter is now generally of box section, and there's been marked increase in the size of the sections, with an accompanying decrease in gauge of metal. Torsion bar suspension is displacing coil spring i.f.s. with gradual sureness; Lanchester has adopted square-section laminated or "leaf" torsion bars, desirable because breakage of a leaf doesn't mean failure of the system. The coil spring system itself has come in for revision, with, for example, English Ford's practice of mounting the coils directly over the king pins, thus taking the suspension load off the wishbones. Dampers of the telescopic type are coming into almost universal use on front ends and many makers are installing them at the rear as well. . . . Wheels today are invariably pressings, even on most quality cars. They range from straightforward discs to slotted discs (for brake cooling) to Gregoire-type five-stud rims which bolt directly to brake drum-wheels. Opinion is divided more or less evenly on the subject of brakes, with hydraulics on all four wheels gaining in usage over the "middle path" approach of hydraulic front and mechanical rear brakes. English cars' top speeds are getting higher, and this fact has spurred British brake research, but there have as yet been no spectacular results. Overseas popularity of the two-leading shoe brake is equalled by that of the hypoid bevel rear end, in which the pinion meshes with the ring gear well below center, permitting lower placement of the driveshaft, and reducing the dimensions of or eliminating the need for a shaft tunnel through the floorboards. For the same reason there's a growing trend toward two-piece driveshafts, U-jointed and "bent" under the floorboards. Fiat is unique in utilizing a torsion bar driveshaft, but several Continental makes have adopted rubber pads in the driveshaft couplings, inspired, undoubtedly, by shaft-drive motorcycle practice: BMW, Zundapp, Nimbus. . . . The abolition of Britain's medieval hp tax has freed manufacturers there to jump aboard the square bore-stroke bandwagon and many have seized the chance. Increasing the bore increases the length of an engine, so that, to fit it to the smallest possible longitudinal space, flats and Vees are being widely used; Lancia has blazed the trail with a V-6. Shorter strokes make for more rigid crankshafts with consequent gains in bearing life. But engineering is a science of compromises, and the object of the short stroke engine is to increase the number of power impulses that can be delivered in a given space of time. Which is to say that the vital factor of piston speed will remain more or less unchanged if stroke is shortened in proportion to increase of rpm. Nevertheless, things are getting around much more quickly in the up-to-the-instant engine, and wear had increased noticeably in valve gear and on cylinder walls. Hence, centrifugally-cast liners, plated liners, chromed top piston rings. Practice seems to point to plated top rings as being the most practical anti-bore-wear measure, and Mercedes for one has adopted it in production. . . . The two-stroke engine has met with little favor anywhere, except in the case of the very popular and well-engineered DKW and in underpowered "austerity" machines. . . . Fuel-injection research may bring new life to two strokes within the coming year. . . . Mercedes-Benz continues to be the world's only production-line diesel car, is entirely successful and fantastically economical. Air-cooled engines are popular in France, Germany, and Czechoslovakia: Panhard, Volkswagen, Tatra. . . . And at last the U.S., seeking performance from other factors than just brute displacement, is



NEW AUSTIN A-70 Hereford Saloon (overhead valve 4-cyl., 68 bhp, 99-in. wheelbase) is seen standing beside its lineal forebear, the original single-cylinder Austin Seven of 1909



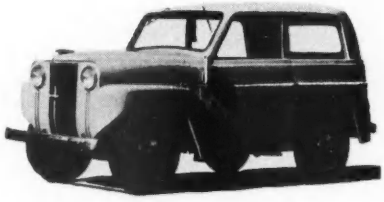
TYPICAL Monkhouse photography: Caracciola winding his Mercedes around Monte Carlo's gasworks hairpin. See "Book of the Month," which is "Grand Prix Racing Facts and Figures"

turning its attention to the design of more subtle valve gear, combustion chambers, and porting. . . . America leads the world with its complex, heavy, expensive automatic transmissions. Europe regards them with envy, desperately wants a simple, inexpensive device that will give equivalent performance. Dollar-competitive England will probably be forced to develop a low-cost answer to America's elimination of the clutch pedal.

FRANCE: The small, rear-engined Renault 760 is a moderately familiar sight in many American cities and has been the staple product of its nationalized manufacturer. A new post-war design has now gone into production, intended primarily to compete with the 15 CV Citroen on the local market. The two-litre (122 cu. in.), four-cyl., pushrod engine is located in the normal forward position, drives to the rear wheels through a four-speed synchromesh gearbox. Coil spring independent suspension is used on all four wheels, and unsprung weight is reduced by the mounting of the differential directly on the body-frame assembly. The body itself is quite American in styling, features smooth sides, pontoon-ish lines, very large curved windshield and rear window. Claimed for the car are top speed of over 80 mph, fuel consumption of about 25 mpg. One body style, a six-passenger sedan, is being made, and sells in France for about $1680.

GERMANY: Lang and Caracciola appeared at Nurburgring recently with two of the pre-war three-litre (183 cu. in.) Mercedes for some movie-making and incidental fast lappery, but there's no further word regarding a Mercedes competition threat for '51. . . . Veritas, the 328 BMW-based Formula II (122 cu. in.) contender that did so well in competition restricted to Germany, suffered a severe blow in the German G.P., when Italian machines of the same class demonstrated their great superiority. The Veritas Company quit racing on the spot, and several directors have resigned. . . . Germany's outstanding Formula II hope now is the AFM machine built by ex-BMW engineer Baron Alex von Falkenhausen. His first car used a much modified BMW engine, but the search for pressure has led him to adopt an original engine for '51. The new power unit comes from the drawing board of the famous motorcycle engine designer Kuchen, is a two-litre V-8 with twin oh cams on each block, eight motorcycle carbs, and a weight of 220 lbs. It pulls 153 bhp at 8000 rpm. The car weighs in the region of 900 lbs., giving a power: weight ratio of 1:6—quite decent for an unblown job.

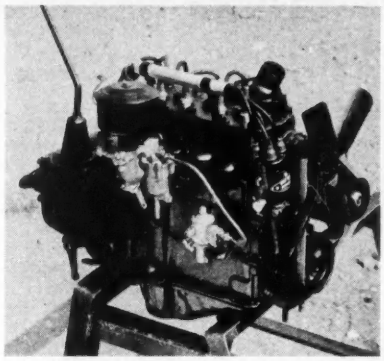
SPORT: At press time the F.I.A. is deliberating the next Grand Prix formula, which will go into effect some time in 1953, the precise date being subject to vote. There are many millions of race fans in Europe, each with his own conception of the ideal formula, and the F.I.A. has the thankless job of satisfying them as well as race car builders. It will be a most historic formula, in any case, since gas turbine propelled racing cars will be fitted in for the first time in history. There's a good likelihood that the existing formula of 1½-litre (91.5 cu. in.) blown, 4½-litre (275 cu. in.) unblown, will be continued. On the other hand, it's equally likely that the small blown jobs will be ruled out entirely. The outcome isn't predictable,



ONE OF Japan's most popular cars is the Datsun "Thrift Sedan." Top speed is 45 mph, gas mileage is quite phenomenal—around 48 mpg

and builders of racing cars are spending sleepless nights—all but Enzo Ferrari, who has a design available for almost any eventuality. . . . New international records for the 350 cc (21.4 cu. in.) and 500 cc (30.5 cu. in.) classes were set at Montlhery by a new challenge to the Coopers: the Kieft. Best time in the 350 cc class was 79.8 for 100 kilometres (62.1 miles), best in the 500 was 91.40 for 200 km. The cars were driven by Britishers Ken Gregory, John Neill, and big name in small displacements, Sterling Moss.

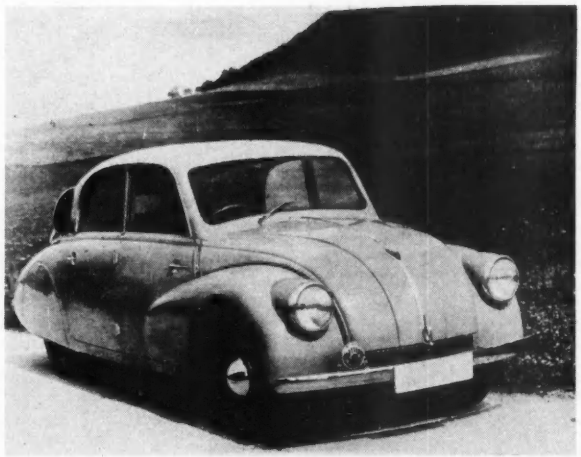
CAR OF THE MONTH: Few Americans are aware of Czechoslovakia's status as one of the world's most industrially progressive nations. The Tatra automobile has made important contributions to both the Czech industry and automotive progress in general since the company was founded back in 1896. The first Tatra car was produced in '97. Two years later a sports version of the same flat twin rear engine model attained a speed of 70 mph. The marque switched to four-cylinder ohv engines in '06, and adopted four-wheel brakes in 1914, on the heels of Isotta-Fraschini. In '23 Tatra startled the



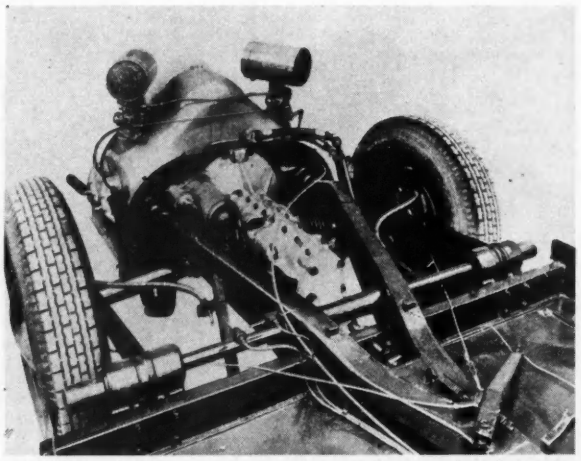
JAPANESE Datsun's engine is a 4-cyl., side valve of 52.5 cu. in. displacement, pulls 21 bhp

world with what was probably the most advanced car of its day; it boasted a tubular backbone chassis, independent suspension on all four wheels, an air-cooled engine. This car continued in production with only minor modifications until 1948—it was that far ahead of competition—although in '34 a V-8 engined car, the power unit air-cooled, rear-mounted, and equipped with oh camshafts, was added to the line. And then in 1948 the Tatraplan appeared: a low-cost family car of striking performance and modern design, obviously Central Europe's most interesting car. It comes equipped with a six-passenger sedan body, is powered by a 1950 cc (119 cu. in.) air-cooled inclined ohv flat four engine located in the rear and forming a unit with transmission and differential. The Tatraplan engine develops 52 bhp, gas mileage is about 26 mpg, and top speed is over 80 mph.

BOOK OF THE MONTH is, with Pomeroy's *G.P. Car* and Earl's *German G.P. Racing Cars*, one of the three "musts" for G.P. racing enthusiasts. It's *Grand Prix Racing Facts and Figures* by George Monkhouse, author of the authoritative and essential *Motor Racing with Mercedes-Benz*. The new Monkhouse opus consists of 238 pages and 203 photos which cover the sport from 1894 to 1949 with brilliance and exhaustive thoroughness. There are, in addition, 46 pages of tables listing the results of every important race between those years. This is a reference work *par excellence* and at the same time a delicious literary experience. What Pomeroy is to the technical side of racing, Monkhouse is to the human side. From G. T. Foulis & Co., Ltd., 7 Milford Lane, Strand, London W.C. 2.



IRON CURTAIN iron and Car of the Month is Czech Tatraplan. Somewhat boxy body is wind tunnel bred, has low drag characteristics. Note duct at rear for engine's cooling air. Design similar to 1934 Tatra



BUSINESS end of the Tatraplan is at the rear. Flat four, air-cooled engine is a unit with transmission and differential. The drive is through swing axles, while the suspension consists of torsion bars and tubular shocks

CLASSIC COMMENTS

by Eugene A. Jaderquist

IN ADDITION to the many mechanical and artistic problems of the classic car owner there is another vexing feature which falls under the heading of "social" problem. No Rolls or Stutz owner has yet hit on the perfect rejoinder for the yokel who leans on the tonneau and quips "How many gallons to the mile, Jack?" Or the considered remark that will cool the moppet's "Will it really do a hunnerdunfifty?"

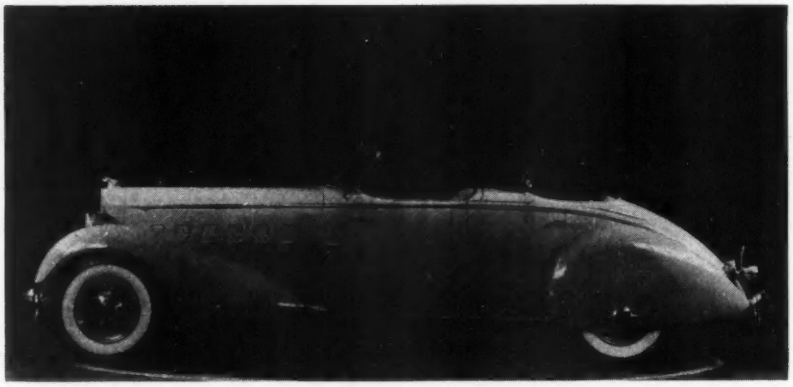
One of my most bitter memories concerns the reaction of a barely pubescent delinquent to my Packard. He was just tucking the radiator ornament under his coat when I appeared on the scene. With an ill-concealed grimace of disappointment, he turned to me and lisped, "Thith yourth?"

When I nodded, he screwed the cap back on. Then he climbed into his Ford and waved me into a race. We passed two intersections neck and neck and I then began to pull away. He speed-shifted into high and while I floorboarded the 12 he suddenly cut in front of me. The side of the Ford loomed like the wall of a building and I reacted by shifting my 225 pounds to the brake. The vacuum-booster lent its authority to my decision and the Packard broke into a costly rubber dance. I wiped sweat off my face while the rear of the Ford dwindled into the distance on the side road. Then I became aware of a gentle scratching sound at my left and turned to see one of the town constables busily recording the scene on an official pad. Those who have been caught in a similar situation know what happened. The local judge yawned all the way through my account of the adventure and then proceeded to find me guilty of violating every local ordinance passed since the advent of Judge Bean. Actually it wasn't I that was guilty, but the Packard. The size, the age, the pretension of the Packard were touched upon frequently by the political hack who had been retired to the judgeship of the area. He seemed to take it as a personal affront that he hadn't owned a similar car.

Since that day I have driven with extreme care. I won't even race a Crosley now. Reports of friends who have been similarly penalized for driving a classic car only confirm my sorrowful conclusion that the law takes a dim view of anything more out of the ordinary than a new Cadillac. For what it's worth, I pass this on to you fellow enthusiasts. Make like a safety poster when you drive or you'll find yourself contributing to the careless fund.

If you've found yourself on the grimy end of the rod too many times write to this column and we'll see if we can't give you some support.

Car of the Month illustrated above is one of the rarest of American custom bodies. It was originally built in 1934 on a short Packard 12 chassis by LeBaron. First owner of the car was Alexis de Sakhnoffsky, then working in Paris as an automobile designer. According to present owner, Herb Shriner, this particular automobile was the hit of the Paris show that year, winning a prize for design. Herb bought the car in 1940 for $1,000. It was in excellent condition but Herb barely had time to sign the ownership certificate when he had to store the car and go on tour with a show. Then the army grabbed him; he went on another tour after discharge; and it wasn't until this year that he refinished the Packard to his own taste.



Herb had owned other classic cars before —two Cords, one Auburn, a Cadillac V-16— and driven them until they began to spread at the joints, then sold them. But the Packard is a romantic car and Herb began a love affair with it in 1940 that is still hot today. In the past 10 years he has turned down about 15 offers to sell, paid just about $650 for storage fees, and spent $1,400 on restoration.

It should be mentioned here that Herb has one asset not common to the classic-car fraternity—a sympathetic wife. She does not bite the lip when a $500 check is written for five new 7.50x17 Vogue Whitewall tires; she does not make mink coat sounds when a second $500 is dedicated to new upholstery. In truth she's more adventurous than her husband. She wants to convert the manual phaeton top to push-button operation!

Herb decided early that he would do none of the actual work on the car himself. He is a comedian working television shows out of New York most of the time and touring the country playing night clubs the rest of the time. Free time he doesn't have—money he does. Consequently he chose to let the mechanics and shop-owners do all the work.

One shop did the painting and the body work, subcontracted the chrome plating, for a total of $500. Of this amount $125 paid for the plating; $75 removed and replaced all the pieces to be plated (grille, bumpers, door handles, windshield frames, decorative strips, etc.); $50 bought the body work, including replacement of a rare hinge and welding a small rip in one fender; and the bright metallic bronze lacquer was worth $250.

(These prices, and all others given in this article, are current in Los Angeles. Other localities, other shops will probably quote different prices.)

Upholstery is a special delight to Herb and he went out of his way to line the interior of the Packard with the most sumptuous materials he could find. The work was done by Reg Parton, a movie stunt man who augments his income with custom leather work when the neck-risking business is sluggish. Herb's original plans called for genuine unborn calf skins but Reg vetoed this as impractical. The *genuine* unborn hides are too soft to stand up under the beating an automobile seat takes. As finally done, the seats were finished with black-and-white matched calf and the top quality second-layer horsehide. The material alone for the interior of the car cost $200—labor, $300. These prices included all floor coverings, new leather on the doors, and the large area on the back of the front seat.

Herb has installed a short top over the front seat because the big top is difficult to handle. This top had to be custom tailored because LeBaron made no provision for it in the original design. Cost for this was $20 for material, $20 for bows, $30 for labor.

While he was laying the car up Herb decided to get the wheels respoked. This is not so silly as it may sound, since one of the principal causes of front-end trouble in the heavy-engined Packard 12 is failing spokes. Respoking cost Herb $25 per wheel.

The original engine is still almost perfect so Herb has not spent money for any major repairs yet. He did have the electrical circuit rebuilt and a truck oil-filter installed and the generator and starter repaired. This was more a matter of insurance against failure than it was immediately necessary. Herb was preparing to drive the Packard from Los Angeles to New York as soon as the work was done and he had no desire to get caught in some snow lodge in the mountains with a dead set of wires.

Like last month's Hispano-Suiza, this Packard is an exceptional example of restoring. Naturally most of us can't afford the luxury of fantastic leather goods and $100 tires. The use of such equipment is not at all necessary to adequate restoration. Seat covers are just as neat as the finest leather and recaps will carry just as much weight as new tires. Chrome plating can be done a little at a time and cheaper paint finishes, if properly cared for, are quite a good substitute for superlative lacquer work. The most important part of restoration is the work you do yourself. There are long, tedious hours to be spent cleaning and polishing chrome, paint and wood; days away from work that can be applied to rewiring the simpler parts of the electrical circuit and doing mechanical work within the limitations of your tools and knowledge. *Classic Comments* is especially interested in seeing what can be done for a minimum cash outlay.

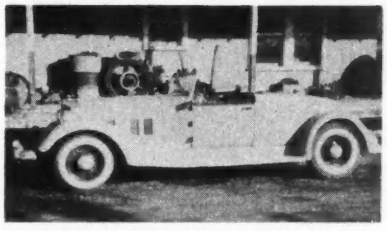
And, like the Hispano, Herb Shriner's Packard is a phaeton. In general, phaetons, roadsters, convertible coupes and sedans, are the most popular body styles with collectors. While it's true that the greater percentage of closed cars were graceless tanks, a few of the ordinary sedans are worth restoring and most of the formal town sedans are very handsome. This latter type is often called brougham, or panel brougham, or town car, or, incorrectly, limousine. The chauffeur sat in front, barely protected from wind and snow by a small, cloth top and the owner and his guests sat in back in the most exquisite drawing-room on wheels the designer could devise. In these cars is found the finest interior work of any of the classics. There is wood paneling of teak and Circassian ma-

hogany and fumed oak; metal appointments in silver and sometimes gold; mother-of-pearl decorations; Elizabeth Arden vanity cases; fine linens, satins, velvets, silks for upholstery—all the materials the most vain and wealthy owner could buy. Exterior lines are sharp and formal. No automobile since that time has ever been so perfectly designed for the one function of formal town use. Indeed how strange it must seem to the first families to see the dowager mother of the clan crouched double as she crawls out of a post-war limousine. Nineteen-fifty's torpedoes are no respecters of dignity.

We hope to find some restored town cars to feature in this column. Unless a few enthusiasts recognize the unusual beauty of this type of classic car, the junkyards will claim what few remain. Granted, one does feel rather odd sitting in the cold and piloting an empty drawing room, but the distinction of owning a beautiful piece of the body-builders' art more than compensates for any embarrassment.

Reader Ford Ross writes to ask, "Is the Chrysler Airflow considered a classic car or just an experiment?" Experiment, I'd say. Like the '36 and '37 Cords, the Airflow is a stock body on a production-line chassis. It does have definite historical value, but it is not beautiful in itself nor was it built with the attention to perfection of detail expected in the classics.

Another reader, James Blair, sends a picture to show how a '34 Packard Super 8



can be modified without destroying the original design. The doors have been cut down and a metal boot has been built for the convertible top. The result is, in my opinion, an improvement over the stock body.

Do any of you know what happened to the special Packard constructed for the Chicago exposition? It was built in 1933 for the Century of Progress show and was billed as the most expensive Packard ever made. The body was a very handsome close-coupled four-door sedan and the spare tire was carried on the rear rather than in fender wells. All body hardware was heavily gold-plated and so was the steering column and the instruments. Wood paneling and trim were of highly polished burley Carpathian elm. The rear seat contained a full length dressing case with gold-plated fittings; a bar with gold cups and gold flasks. The exterior finish was called Sun Glow Pearl because it seemed gold or brown or pearl depending on the light. Any information on this car would be greatly appreciated.

At the same fair, Cadillac showed a V-16 that was dubbed "Tomorrow's Car." Oddly enough the nickname proved excellent prophecy. The sharply sloping V-windshield, the ducktail back, the skirted fenders, the turret top all became standard parts of future GM designs.

That's about it for this month. Remember we want to see your pictures and we want to hear all about the work you've done on your classic car. If your classic car is chosen as Car of the Month you will receive a one-year subscription to MOTOR TREND.

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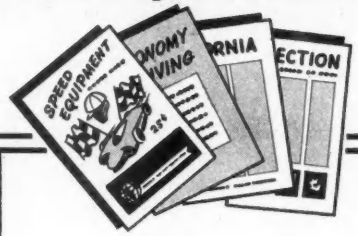

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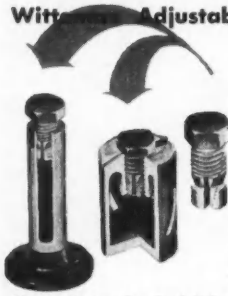

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This Changing World

(Continued from page twelve)

Wharton Cushion Guard Rail Bumpers "blended into the lines of your car."

The year 1925 started off brightly as Oldsmobile introduced chrome plating. G. M. Research found that the main cause of balky motors in the spring were sulphuric and sulphurous acids caused by the condensation of moisture in the crankcase, accumulated during the winter months. To reduce this, Cadillac was the first to work on crankcase ventilation.

Although tires were much improved, and filling stations more widely spread, Cadillac came out with an air compressor built on the left side of the transmission.

The following year saw a continuation of refinements. Hudson offered the first safety glass and a starter button on the instrument panel. As the first sign of a new trend to lower cars, Packard announced hypoid rear ends. Since a special lubricant was required, there was much shaking of heads. Chandler introduced an arrangement that provided one-shot lubrication and hot water car heaters came on the market.

The next year Carl Breer began to think of aerodynamics in relationship to auto design. This led him to the "Airflow" design and monocoque body and chassis design.

The curtain came down on the Model T. Although many people believe it to have been unchanged since it was first designed in 1908, it had actually been evolving throughout its long production period, and the difference between the first and last car is startling. However, Ford appreciated the change in demand from cheap transportation to comfortable, even luxurious transportation, and on May 26th closed his factories to tool up for the Model A. Lockheed (who had changed the spelling of his name from Loughead) introduced an internal hydraulic brake system.

The year 1928 saw the introduction of the syncromesh transmission (Cadillac), and shatterproof windshields (Ford Model A). Unfortunately, the plastic lamination in the Ford glass turned yellow and crazed in a short time.

In 1929 the first Cord appeared, its front wheel drive giving it a great advantage in the trend to lower cars. Automobile radios, the control head clamped to the steering post, appeared, as did foot controlled headlamp dimmer switches and dual tail lights. By now the proportion of closed cars to open was up to nine to one as against the reverse 10 years ago. In the early days, most car owners were sportsmen and pioneers, but now millions of people whose interest in sport did not extend beyond baseball found automobiles indispensable. These millions of customers directed the manufacturers away from open, flashy, hard riding and temperamental sports cars to soft riding and heavy steering cars.

In 1930, Cadillac introduced the first V-16 engine and Studebaker developed the intake silencer. The latter again offered free-wheeling and also put helical gears in transmissions. Pontiac's contribution to this year's progress was the pressed steel axle housing and tin plated pistons.

Cars were becoming heavier and tires were using lower pressures so that steering effort became an important problem. Saginaw Steering Gear Corp. developed the worm with roller teeth to ease this situation.

In 1931 free-wheeling swept the industry like an epidemic. No less than 17 different cars offered this feature. Pontiac made the first radiator grille of pressed steel and Duesenberg produced the first stock car equipped with a supercharger.

Outside visors, which had disappeared in the trend toward cleaner lines, re-appeared inside the cars in 1932. Oldsmobile announced the first automatic choke and Pierce-Arrow developed hydraulic valve lifters. Buick, Cadillac and La Salle offered a vacuum-operated clutch. A style note was sounded by Graham with fender skirts.

In 1933 all Fisher bodies were equipped with individually controlled ventilators, known as "No Draft Ventilation." Independent suspension on front wheels appeared this year on Chrysler and General Motors cars.

Reo came out with the gearshift on the dash. There were two gearsets, each with a low and direct drive. In ordinary operation, one remained in direct drive while the other was manually controlled. Chrysler introduced its Airflow models and the Borg-Warner automatic transmission overdrive. Hudson was the first to hide its spare tire.

By 1935 the trend away from sports type cars was emphasized by increasing sales of two- and four-door closed bodies. The 1935 Cord, designed by Gordon Buehrig, was far ahead of its time. Among its new features were disappearing headlights, front and rear doors made from the same dies. It was the first car to dispense with a hood ornament, and the first two-door convertible to have a crank-down rear quarter window aft of the door. There were many innovations in the interior, to be followed years later on other cars. It was the first car in this country with a horn ring, and the first to depart from wood or simulated wood instrument panel and garnish moldings. It was the first to sew wires in the headlining to hold it against the deeply curved top like the "hardtops" of today. The rear vision mirror was mounted on the panel and the radio speaker on the header, a new switch. The hub caps extending to the rim were also the first. The so-called "step-down floor" (a floor lower than the top of frame) was standard procedure on race cars. The Cord was the first to utilize the idea in production cars. It also started the cycle away from exposed running boards. The body dies were later sold to Hupmobile and then Graham, but they were not suitable for low cost, high production cars.

In 1937 Olds and Buick offered automatic transmissions. Coil springs were used in the rear and again the gearshift was placed on the steering column. This time transmissions were suitable for such operation and the move was successful. Batteries were taken from under seats or floorboards, where they had been hidden (after being banished from the runningboard) and were cached under the hood so that they could be frequently checked and serviced.

In 1938 more development work was done on transmissions, the effort now devoted to ease of operation. Packard announced the "Econo-Drive," Chevrolet its vacuum-operated gearshift and Chrysler developed its fluid coupling.

In 1939, feeling that the trend toward larger cars was overlooking an important market, Powell Crosley, Jr. introduced the small Crosley. This year Oldsmobile introduced what was to become the most popular form of automatic transmission, the "Hydra-Matic Drive." Hudson introduced airfoam cushions in cars and a safety hood hinged in front with the lock under the dash.

In 1940 Chrysler brought out their safety rims and Willys introduced the Americar. Cars had long since outrun their headlights and the situation was becoming serious. Many state laws forbade headlight bulbs stronger than 32 candlepower, although many motorists replaced them with 51 cp bulbs but ran the risk of fines. To remedy the situation an industry-wide program was undertaken that resulted in the introduction

of sealed beam headlights. Although these lights incorporated improved lenses and longer life, they basically provided better light by being approximately 51 cp, sidestepping the law by being rated in watts instead of candlepower!

In March, Col. Harrington invited a group of automotive engineers to witness the demonstration of a small armed car designed by Captain Robert G. Howie. This car was the forerunner of the "Jeep."

In 1941 Cadillac developed the recirculating ball steering gear, the lowest friction steering device to date, while a temporary halt was put to automobile development and production the following year.

In 1945 wartime restrictions were lifted and the first civilian Jeep was built by Willys. Other new cars were Kaiser, Frazer, and Crosley. Owens-Corning built an experimental car with a Fiberglas body, while William B. Stout was retained by them to design the shape.

The 1946 Studebaker and Crosley had the first carry-through fenders, and Studebaker highlighted the trend to larger rear windows. Vacuum-operated windows were developed by Trico, and the accessory to end all accessories, the radio telephone, was made available. The expense, delays waiting for a clear channel, and the lack of privacy were the major drawbacks to its meeting with general acceptance.

After the war there had been a rush to cash in on the great demand for cars. Considering that only Kaiser and Frazer remain of the 12 that started, it seems that the difficulties of getting into production were too tough, while others may have conceivably been stock promotion schemes.

In 1947 sun visors again appeared outside windshields. The three-wheel car, which had been abandoned about 70 years ago upon the invention of the Ackerman steering principle, reappeared on the short-lived Davis.

In 1948 another cycle was completed when Goodrich announced its tubeless tire. The Playboy Motor Car Company displayed the first U. S. production metal top convertible. Buick brought out the first modern torque converter, the Dynaflow.

The trends in cars now seem to be well defined. In the engine compartment, high compression engines, led by Cadillac and followed by Hudson and Oldsmobile, are the leaders, with the Oldsmobile engine being designed to permit easy compression ratio changes in production. Improved efficiency has also resulted through operating the engines at a higher temperature; one method is the use of pressurized cooling systems, another the use of a high boiling point coolant.

Engine speeds have increased over the years to the point where most of them now peak at about 3400. Since piston speeds average around 2500 feet per minute, the maximum for long engine life, it is doubtful that engine speeds will increase appreciably. If they do, it will be with smaller engines, but the trend of bore is upward to the present 3.37 inches, the stroke is somewhat stable at 4.11 inches and both the displacement and number of cylinders are increasing. The average values of the latter are 256.1 cu. ins. and 6.88, respectively.

Average horsepower is also increasing, having gone from 54 in 1930 to 104 today. Horsepower per cubic inch of displacement, a good indication of efficiency, has increased from .331 in 1930 to .455 today, better than 30 per cent more. A factor diminishing overall efficiency are all the extras. Radios with extra speakers, directional signals, power-operated windows and tops and automatic transmissions all add to the load of the engine. With the transmissions this is mitigated somewhat by the use of higher ratio rear ends, but this helps only on country driving. Very low pressure tires also increase gas consumption, and in the opinion of many, the extreme practical limit of soft tires has been reached.

The trend in transmissions is obviously toward automatic. Whether it will continue when a buyer's market in automobiles comes back is debatable. However, it seems that the gasoline engine's inherent low torque at low speeds characteristic should be overcome by a method better than the gearshift and clutch pedal and simpler than the complex automatic transmission. A recent accessory for overdrive control may be on the right track. The writer suggests a lever at the steering wheel with about a two-inch throw for electric shifting of planetary gearsets. This might have a button in the end to control a magnetic clutch of the type developed by the Bureau of Standards. In any event, the extreme complexity of automatic transmissions seems unwarranted.

The basic trend in bodies is the forward progression of the passenger seats, resulting in a better ride but poorer balance. It is generally agreed that there is too much weight on the front wheels. It does not seem reasonable to put the rear seat back over the axle and, in the writer's opinion, there are too many disadvantages to the old-fashioned rear engine design for that scheme. An alternate, partial solution would be to take the unnecessary weight out of the heavy engines and front end grilles and bumpers.

The use of the de Dion type of rear axle to eliminate "tunnels" in the floor has advantages, but at present the cost is a serious obstacle. Strangely, however, it is being used in this country on Dodge trucks!

The glorified carpentry of the station wagon seems to be on the way out. The through fender made the traditional crating look a little absurd as the designers could find no logical place for the sheet metal to end and the wood to begin. The intermediate stage of steel "wooden" bodies is now in full swing. The sheet metal is tortured into simulated wooden shape and then covered with decals of wood grain. Plymouth has broken the ice with its Suburban, a utility car that pays no respect to the carpenter. In this field the Kaiser utility car also seems to be a noteworthy design.

It must be borne in mind that many of the solutions to the problems will be chosen by the public and the economists rather than the engineers and designers. In summation, the car produced by the millions is a close reflection of what the millions of buyers desire.

Since the writer is too young to have witnessed many of the events noted here, he wishes to express his appreciation and indebtedness for the assistance rendered by his father, Milton, an avid motorist since buying his first Ford in 1906 at a bicycle shop in Hartford, the Automobile Manufacturers Association, and the following sources:

Automobile Trade Journal, Silver Anniversary Number, Dec. 1, 1924. Chilton Pub. Co.

Combustion on Wheels, by David L. Cohen

Life Magazine, June 17, 1946 and March 15, 1950

Automotive Industries, May 15, 1946 and March 15, 1950

A Chronicle of the Automotive Industry in America, published by the A.M.A.

The Horseless Carriage Club Gazette, of Nov. 22, 1945

Tallyho, published by the Automobile Club of Michigan

Golden Jubilee Program, published by the Detroit Golden Jubilee Committee in 1946

The Turning Wheel, by Arthur Pound

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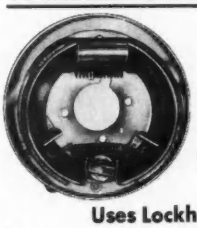

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Hudson Motor Trials

(Continued from page fourteen)

wheel. The rear window makes cars appear squatter than they actually are—and by raising or lowering yourself in the seat, you can cause them to change their shape.

STEERING: Despite the high steering gear ratio (20.4:1) the Hornet handles as if it had a much quicker ratio. Controllability is good into turns at high speeds and it doesn't take a lot of steering wheel movement to keep the car going around a corner. Center-point steering is used in conjunction with the 18-in. steering wheel, which is set at a comfortable position. No wind wander was noticed at any time and, surprisingly, we only heard the low-pressure (15 x 7.10) tires squeal under the most severe cornering.

TRANSMISSION: The Hudson Hornet comes stock-equipped with a conventional three-speed forward transmission, to which overdrive can be added ($99.92 extra). The test car, however, was equipped with Hydra-Matic (optional, $158.30), with which a 3.58:1 rear axle is used.

FUEL CONSUMPTION: The over-all fuel consumption average for the Hornet on this motor trial was 14.07 mpg, which is not overly high; however, in consideration of the car's weight and the fact that a big displacement (308 cu. in.) engine needs a lot of fuel to keep it running, this average is not too disappointing. The averages for various speeds and traffic conditions are shown in the Table of Performance.

Appearance and Mechanics

If you've ever seen a Hudson after it has been involved in an accident (or have seen photographs of one), you've seen the greatest advantage to the unit-type, all-welded frame and body, such as used on the Hornet. The Monobuilt frame completely encircles the passengers, front, sides and rear, while the floor is recessed below the frame. The safety aspect of this arrangement cannot be denied, while the merits of the "step-down" floor are dependent on personal likes and human configurations.

The body of the Hornet seems to be well put together, the welds and fit of joints being of good workmanship. Body styles available in the Hornet series include the club coupe, convertible brougham, the four-door sedan.

Hudson claims to have the hardest engine block in the industry—a chrome alloy in which no valve seat inserts are needed. The most powerful six used in American stock production cars, the engine is a continuation of Hudson's policy of developing high compression L-head engines.

Some interesting features of the Hornet engine are: a dynamically and statically balanced, four main bearing crankshaft; pinned-in-position piston rings (to prevent chatter and rotation); pressure lubrication and a floating oil intake (to permit recirculation of the cleanest oil); a dual carburetor (three cylinders each being fed by a separate carburetor system); and a waterproof ignition system that has a radio and television suppressor built into the distributor cap. (If you have a TV set, you know what a boon this would be as a requirement for all cars.) Detail specifications are given in the Table of General Specifications.

Trend Trials Number

As we have done with each tested car, starting with the Nash Statesman (Dec. '50 issue) we have determined a Trend Trials No. for the Hudson Hornet. This number has been arrived at through totaling the cost per bhp (how much it costs you for the power of the automobile), the fuel cost per year (based on the over-all fuel consumption average obtained on the motor trial), and the normal maintenance cost.

Ordinarily, the Hudson Hornet with Hydra-Matic would have been given a Trend Trials No. 29.8, the lowest number given to a car evaluated in this price bracket ($2201-$2500). However, there is another very important item that we are adding to the TT No. this month—that of depreciation, something which cannot be overlooked.

The average depreciation percentage is arrived at as follows: The average retail price of the models from the five previous years is each subtracted from the new model's price. When this is averaged, it gives the average depreciation percentage, projected over a one-to-five-year period. (This should *not* be construed as the *average yearly* depreciation.)

In the case of the Hornet, the depreciation percentage is 9.9. When this is added to the above-quoted TT No. 29.8, it gives a final Trend Trials No. of 39.7 for the Hudson Hornet with Hydra-Matic.

(Since the depreciation percentages were not worked out for the three previous cars on which TT Nos. were quoted, they are given here: Nash Statesman with Hydra-Matic, 8.8, for a revised TT No. 32.9; Ford with Fordomatic, 8.1, for a revised TT No. 30.2; and Packard with Ultramatic, 11.3, for a revised TT No. 43.7.)

TABLE OF PERFORMANCE

DYNAMOMETER TEST

1200 rpm (full load) 25 mph	38.5 road hp
1800 rpm (full load) 39 mph	58 road hp
2000 rpm (full load) 43 mph	63.5 road hp
3300 rpm (full load) 74 mph	90 road hp (max)

ACCELERATION TRIALS (SECONDS)

Standing start ¼-mile	:19.88 (D)*; 19.41 (L-D)**
0-30 mph	:04.41 (D); 05.11 (L)
0-60 mph through gears	:14.95 (D); 14.64 (L-D)
10-60 mph in high	:13.74
30-60 mph in high	:10.39

*Shift using DRIVE range only. **Shift using LOW range, then to DRIVE.

TOP SPEED (MPH)

Fastest one-way run	97.51
Average of four runs	97.09

FUEL CONSUMPTION (MPG)

At a steady 30 mph	18.50
At a steady 45 mph	16.91
At a steady 60 mph	14.28
Through light traffic	13.62
Through medium traffic	11.49
Through heavy traffic	9.60

BRAKE CHECK

Stopping distance at 30 mph	30'4"
Stopping distance at 45 mph	92'8"
Stopping distance at 60 mph	166'0"

DECELERATION CHECK (SECONDS)

Time to slow from 60 to 45 mph	:09.61
Time to slow from 45 to 30 mph	:11.81
Time to slow from 30 to 15 mph	:16.28

GENERAL SPECIFICATIONS

ENGINE

Type	L-head, in-line 6
Bore and Stroke	3 13/16x4½
Stroke/Bore Ratio	1.08:1
Cubic Inch Displacement	308
Maximum Bhp	145
Compression Ratio	7.2:1

DRIVE SYSTEM

Transmission—Conventional three speed; Ratios: Low—2.88:1; Second—1.82:1; Third—1:1; Overdrive—.7:1; Hydra-Matic four-speed, automatic transmission

Rear Axle—Hypoid, semi-floating. Ratios: Standard—4.10:1; Optional—3.58:1 or 4:55:1; with Hydra-Matic—3.58:1; with overdrive—4.55:1, optional 4.10:1

DIMENSIONS

Wheelbase	124 ins.
Overall Length	208 3/32 ins.
Overall Height	60⅜ ins.
Overall Width	77 2/32 ins.
Road Clearance	8 ins.
Tread	Front, 58½ ins.; Rear, 55½ ins.
Turning Radius, Right, 21 ft. 2 ins.; Left, 20 ft. 5 ins.	
Turns, Lock to Lock	5⅞
Weight (Test Car)	3880 lbs.
Weight/Bhp Ratio	26.8:1
Weight/Road Hp Ratio	43.1:1
Weight Distribution (Front to Rear)	56.4/43.6%

"..and that taught me to drive"

LAST FALL the basketball coach of the local high school called on the 'phone and asked me to provide transportation for some of the ball team to a neighboring town.

I explained that the brakes were bad on my car and would take it to the garage and if they could be relined that afternoon I would be glad to help him out.

The car was ready by 6 P.M. and as I went up to the school I tried the brakes several times and must say the mechanic did a real job because I could really "stand her on her nose."

I picked up my load of five boys. As boys will do, they were wrestling and hitting each other and just horseplaying around. Our towns are far apart down here [in Texas] and I didn't even slow down until I came to our destination. As you enter town the highway I was on intersects a main highway with a stop sign and a left turn to go to the school. Well, I thought I would give the boys a little thrill, so I just kept the speed at about 60 mph until I was about 100 feet or close enough that I would really have to bear down to stop.

At the last second I hit the brake pedal and it just hit the floor feeling like a wet dish rag. I just had two choices—go across the street into a house or try the turn. I told them to hold on and cut deep to the left, going around on two wheels in a slide that would make a stock car driver turn green with jealousy. Just lucky that no cars were in my way. Later I found that the brake fluid had all worked out through a loose connection.

Since then I haven't tried to show off and I start stopping or at least test my brakes so that if something is wrong, I will have plenty of time to stop.

And that taught me to drive. . . .

—N. A. Bomar

SELL 'N' SWAP

NOTE: Due to the many requests for information on where to obtain hard-to-get parts, cars, etc., MOTOR TREND is starting this new column. If you're looking for a car that you can't find, if you have a car you'd like to sell or trade, check this column. We'll publish any reasonable request, first come, first served. Limit your copy to 25 words and base it on any of those shown below. We reserve the right to edit where necessary and are not responsible for accuracy of descriptions.—Editor.

FOR SALE—1937 Cord, unsupercharged Beverly factory remanufactured throughout. Beautiful upholstery, new tires, tubes. Best offer over $700. Paul Moulton, 414 Dwight Street, Elgin, Ill.

WANTED—Right rear fender (preferably new) for 1939 model 61 phaeton Cad. J. B. Laughlin, 106 Patton Hall, Princeton, N. J.

INFORMATION—On how to channel and soup up '42 Willys four sedan. Split manifold with dual V-8 60 carbs also desired. A. B. Coleman, c/o North American Aviation, Edwards Air Force Base, Muroc, Calif.

FOR SALE—1936 Cord, 4-door sedan, in fair running condition. Needs paint, upholstery, motor work. Price $350. James W. Lamke, 825 Palace Ave., Santa Fe, N.M.

INFORMATION—About increasing performance of Morris Minor engine. Paul Floreen, 21047 Amil St., Torrance, Calif.

FOR SALE—1948 Triumph roadster. New tires and paint. Perfect condition, only 18,000 miles. Price, $1950. Ed Fawcett, 1587 Santa Maria Ave., San Jose, Calif.

WANTED—Unusual horns which fit under hood of '51 Chevrolet Convertible, also ideas on unusual color paint for same. J. W. Norwine, White Chevrolet Company, Zanesville, Ohio.

FOR SALE—1950 Oldsmobile Rocket engine, 1/8" over bore (3 7/8"). Also eight new con rods, camshaft, crankcase and wrist pins. Price for all, $100. Joseph Zidar, 43 Utica St., Denver 4, Colo.

FOR SALE—'34 Ford coupe body complete and in good condition. Price, $8.00 or trade for 16-in. Ford wheels. Dave Hilliker, 312 33rd St., Newport Beach, Calif.

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ACCESSORY TRIALS

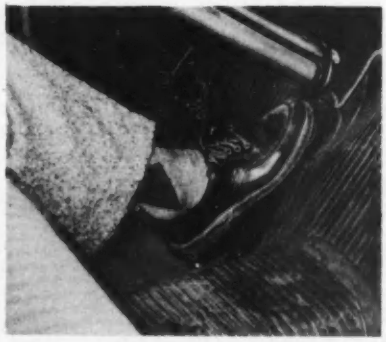
Accela - Brake

BRAKING with a minimum of effort and pressure is the purpose of the Accela-Brake, the newest braking accessory to be placed on the market. This item, introduced in "Trade Topics" (Jan. '51 MOTOR TREND) is an application of vacuum booster principles (plus a pressure equalizer) used for a number of years on truck brakes. It eliminates the time lag involved in lifting the foot from the throttle and moving it to the brake pedal.

The Accela-Brake pedal fits over the throttle pedal and activates the brake by a slight pressure of your heel. The brake is automatically released when the throttle is again depressed. The braking unit, consisting of an accumulator (pressure equalizer) and a control unit, is installed under the hood of a car. Vacuum is taken from the intake manifold and a line connects the unit to the hydraulic brake system between the master cylinder and the wheels. Accela-Brake does not interfere with the use of a standard brake pedal and can be disconnected, if the driver desires, by pulling out a control button installed on the dash.

For the purposes of this accessory trial, an installation was made on a 1950 Ford (see photograph). The accumulator can be seen next to the battery, with the control unit aft of the accumulator. The vacuum line from the control unit is on the right side and behind the unit. The cable control to disconnect the Accela-Brake can be seen on the left forward side of the control unit. On the test car (which was equipped with overdrive), a vacuum tank was installed below the floorboard. The purpose of this tank is to provide a reserve for a braking emergency in the event that the engine is no longer running (in which case there would be no vacuum). Using the reserve supply from the vacuum tank it was found that were was enough for two full stops (which is twice as much as would be necessary since the engine would not be running and it would be impossible to start out again).

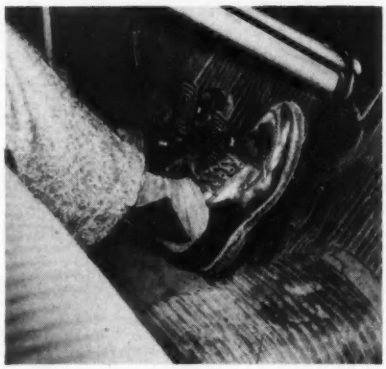
At first, driving the Accela-Brake equipped car was a little awkward because of the fact that your foot rests on the pedal and that it requires a different driving technique for braking. For the first few miles it was somewhat difficult to co-ordinate the application of the brake with pushing in the clutch pedal. This is because the release of the clutch is normally associated with removing the foot from the throttle and applying the brake pedal. However, this new method of driving takes a minimum amount of co-ordination once you get used to it. It does not require any foot pressure, the brake being applied by rocking back your foot and holding a steady position with your heel. Actually, stopping is like digging your heel into the ground as you slide down a dirt hill. There is no danger of applying the throttle and the brake at the same time, since the control pedal pivots around a neutral position, where neither the throttle nor the brake is applied.



NORMAL position of foot—throttle is down

There are several adjustments that alter the amount of pressure required to stop the car. The first ones are used while the driver is becoming acquainted with the unit, while later adjustments that require less rocking action for brake application can be used when the driver is familiar with the Accela-Brake action.

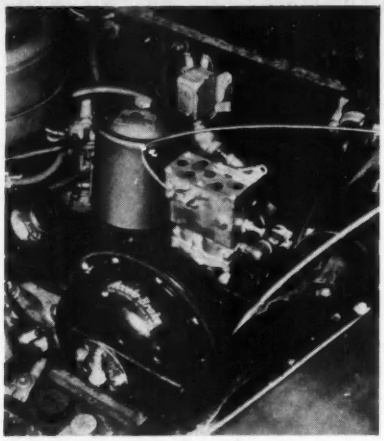
In tests conducted with the Accela-Brake we found that this unit speeds up the brake application time. These brake reaction tests were conducted in the following manner: Persons driving the Accela-Brake equipped car for the first time were checked for their brake reaction. It was found that their reaction time necessary to apply the standard brake was slightly less than that necessary to rock the foot back and apply the Accela-Brake. When these figures were compared against the figures arrived at through a check of the writer, who had been using Accela-Brake for a month, it was found that the average standard braking reaction time was approximately the same. However, the Accela-Brake reaction time shaved a good 1/10th of a second from the standard brake time. When this is applied in terms of stopping distance at 40 mph, it means that you can stop 6½ ft. shorter. At times this could be the difference between being involved in an accident and escaping injury.



ACCELA-BRAKE being applied—foot rocked back

It was found that on hills a lesser amount of co-ordination was required to keep the car from rolling backwards. With the clutch pedal in and the foot rocked back, the brakes are applied. To start from this position a much quicker movement can be made by merely pressing the throttle.

When the Accela-Brake is used with a car that has an automatic transmission, driving is practically effortless because of the fact that only one pedal is used for going forward and for stopping.



INSTALLATION of Accela-Brake on test '50 Ford

Disadvantages of the Accela-Brake are not inherent disadvantages, but are merely those that could result through improper usage or incorrect adjustment. These are a somewhat uncomfortable foot position if the Accela-Brake is not properly positioned, and a lesser brake life if the pedal is not adjusted so that there is a definite neutral position between the throttle and brake. One minor disadvantage is that increased leverage for applying the throttle is necessary because of the additional pedal.

In conclusion, we would state that the Accela-Brake is what we believe to be the first of many improvements in braking systems. With the increased speeds that are being developed in the modern automobile the brakes become increasingly important. There is no excuse for faulty brakes or improperly adjusted brakes. When a system such as Accela-Brake can be added that takes less braking effort and decreases stopping distances we feel that considerable progress has been made. The price ($66.50) seems fairly reasonable for the added braking safety.

—W.W.

PREVIOUS MOTOR TRIALS

MG-TC, 1950 Studebaker Champ.	Oct. '49
1950 Buick Special	Dec. '49
1950 Ford V8	Jan. '50
1950 Hudson Pacemaker	Feb. '50
1950 Plymouth	Mar. '50
1950 Mercury	May '50
1950 Nash Rambler	June '50
1950 Oldsmobile 88	July '50
1950 Chrysler New Yorker	Aug. '50
1950 Chevrolet	Sept. '50
1951 Kaiser	Oct. '50
1951 Henry J	Nov. '50
1951 Nash Statesman	Dec. '50
1951 Ford V-8	Jan. '51
1951 Packard "200"	Feb. '51

Crosley Sports Trial

(Continued from page sixteen)

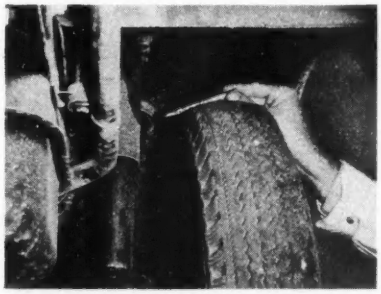
clocked speed of 66 mph (speedometer reading 71). I was steering with one hand, incidentally, and felt absolutely at ease. This one hand business by the way was no stunt and I assure you I'm no dare-devil. I hadn't been instructed how to strap the folded top properly, and I was holding it with one hand to prevent the fabric from flapping around in the wind at that speed.

Again the mere 44 inches came to mind as I topped a half mile climb up a steep, rough, partly muddy dirt road with three men on board plus camera, and test equipment. (We hadn't dared try this road with the camera car.) The Crosley climbed it steadily, without fuss or overheating.

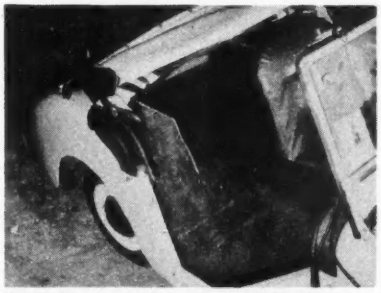
Fuel economy is of course the Crosley's long advantage, for it consistently recorded 30 mpg and up, except in heaviest traffic. Incidentally, all fuel consumption tests and acceleration tests other than standing start ¼-mile were made with two passengers, i.e. full load for the Crosley. With driver only, the figures would have been still better.

Concerning detail finish, the Crosley is plain as one would expect in a car of this price. It was even rough in a few spots. For instance the hood hatch panel fitted poorly. An innovation on this year's model is the addition of doors replacing the earlier canvas splash guards. The car tested was very gay with a chartreuse paint job and red leatherette upholstery.

For quality in the engine room the Crosley bows to no other car on the road. The



CROSLEY'S handling characteristics were exceptionally good although car needs rear sway bar. Top spring cap rubbed tire on fast curves



SEATS have easy three-position adjustment, can be instantly removed leaving floor clear for light hauling. Note luggage space under deck

little four cyl. engine features five main bearings, overhead camshaft, valve rotators, die cast aluminum pistons, with chrome plated top ring and a bore-stroke ratio that permits high engine rpm without excessive piston speed.

To sum up, the Crosley Super Sports is a fine little car, game for anything, and in Jack Early's words, "full of pleasant surprises."

(See page thirty-four for tables)

JUNIOR MIDGET RACING

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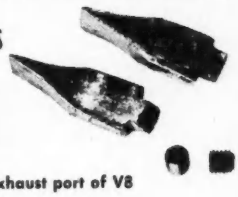

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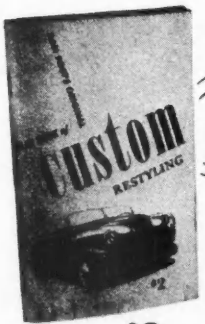

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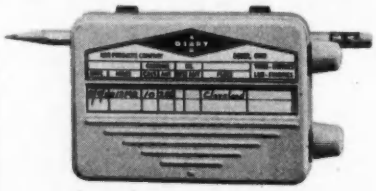
TRADE TOPICS

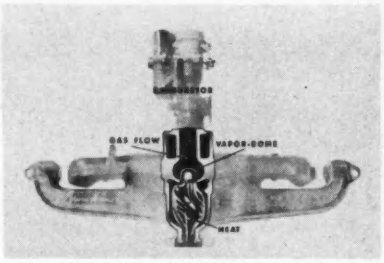
WHERE WERE YOU ON JUNE 13? WHAT WERE YOUR EXPENSES for gas, oil, tires, etc.? Those are questions that are intended to be answered by the "Kar Diary," a new device of compact design, with a roll of paper controlled by two protruding knobs, mounted in a plastic case 4½x3x¾ ins. An opening across the face of the device, marked with subdivisions, provides convenient space for entering date, place and car expense on a single line, or two lines. After each entry is completed, a slight turn of a roller knob brings up a new line for the next entry. The record may be turned back for examination



of entries of any preceding date. A complete record may be kept for an entire year on a single roll, with refills available so that the Kar Diary lasts indefinitely. A spring fixture permits Kar Diary to be conveniently clipped to, or removed from, any inside sun visor, and provides a holding space for a pencil. Kar Diary retails for about $1.37. The manufacturer is Kar Products Company, Dover, Ohio.

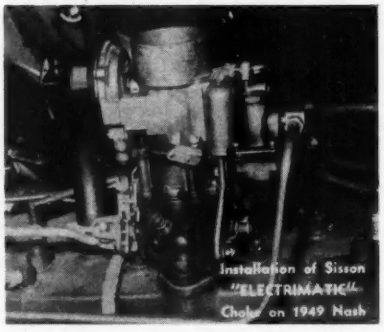
★ ★ ★

TO CORRECT IMPROPER VAPORIZATION IN THE INTAKE MANIFOLD, one of the causes of poor engine performance, a new item has been placed on the market by the Manifold Hot Spot Corp. The manufacturer states that since different engine ailments were found to be traceable to excessive carbon formation below the vaporizing chamber of the manifold, their VAPOR-DOME was developed. VAPOR-DOME is said to reduce carbon formation, eliminate excessive choking, prevent rich mixture, cut down crankcase dilution, prolong life of valves, improve combustion, and assure proper vaporization of the gasoline. VAPOR-DOME is available in two sizes, and can be installed in about 20 minutes. Retail price, $3.75, plus installation. Manufactured by Manifold Hot Spot Corporation, 73 Main Street, Oshkosh, Wisconsin.



★ ★ ★

DESIGNED TO STOP CAR OWNERS' ENGINE-STARTING HEADACHES ON COLD WINTER MORNINGS is the new Sisson "Electrimatic" Choke. Developed and manufactured by the Sisson Choke Division of the Pierce Governor Company, Inc., Anderson, Indiana, the Electrimatic is said to provide faster starting and to keep the engine running smoothly, regardless of the weather. The manufacturer claims that it eliminates overchoking, flooding and puts an end to costly gas waste, jumpy and jerky pick-ups. It can be installed on any carburetor using automatic choking, and retails at service stations and garages for only $5.00. When the starter is pressed an electro-magnet closes the choke valve to the exact position required by engine temperature and maintains correct choke for fast, easy starting. When starter is released an extra strong thermostat spring takes over the choking operation. A built-in climate control automatically adjusts to any temperature range, with no manual adjustment to worry about.



Installation of Sisson "ELECTRIMATIC" Choke on 1949 Nash

★ ★ ★

Crosley Sports Trial

(Continued from page thirty-three)

TABLE OF PERFORMANCE

DYNAMOMETER TEST

1200 rpm (full load) 20.5 mph	7.5 road hp
2000 rpm (full load) 33 mph	11.75 road hp
3200 rpm (full load) 49 mph	15.25 road hp (max)

ACCELERATION TRIALS (SECONDS)

Standing Start ¼-mile	:24.43
0-30 mph	:07.38
0-60 mph through gears	:28.08
10-60 mph in high	:35.44
30-60 mph in high	:23.52

TOP SPEED (MPH)

Fastest one-way run	66.62
Average of four runs	62.72

FUEL CONSUMPTION (MPG)

At a steady 30 mph	32.46
At a steady 45 mph	30.48
Through light traffic	31.07
Through medium traffic	28.42
Through heavy traffic	22.22

SPEEDOMETER CHECK

At 30 mph indicated 31 mph	3.3% error
At 45 mph indicated 47 mph	4.4% error
At 60 mph indicated 64 mph	6.6% error

GENERAL SPECIFICATIONS

ENGINE

Type	L-head, in-line 4
Bore and Stroke	2½x2¼
Stroke/Bore Ratio	0.9:1
Cubic Inch Displacement	44
Maximum Bhp	26.5 @ 5400 rpm
Bhp/Cubic Inch	.602
Compression Ratio	8:1
Maximum Torque	32.5 @ 3000 rpm

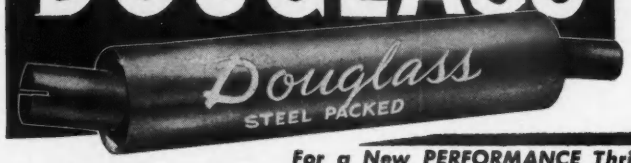
DRIVE SYSTEM

Transmission — Conventional three speed; Ratios:	Low—3.29:1, Second—1.72:1, Third—1:1, Reverse—3.29:1
Rear Axle—Spicer, semi-floating, spiral gear, Ratio	—5.17:1

DIMENSIONS

Wheelbase	85 ins.
Tread (Front and Rear)	40 ins.
Overall Length	137 ins.
Overall Height	51 ins.
Overall Width	51 ins.
Turning Radius	15 ft.
Weight (Test Car)	1250 lbs.
Weight/Bhp Ratio	47.2:1
Weight/Road Hp Ratio	81.9:1
Weight Distribution (Front to Rear)	51.6/48.4

DOUGLASS



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Complete Header and Dual Muffler Kit includes headers, extensions, 2 steel pack mufflers, left tail pipe, all brackets, clamps and gaskets. Also instructions for easy installation

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Deep, mellow, dual tone! Straight—Thru type . . . Cuts back pressure up to 50% giving your car added power and acceleration! Saves your engine! Steel-packed, seamless steel tube construction! Won't rust out! Outlasts 3 to 5 ordinary mufflers! Easy to install, fits same space your present muffler is in!

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Chry. 6 Cyl., DeSoto, Dodge, Hudson 6 Cyl. Lafayette, Ply. 42-50, Stude. Comm., Terraplane	$7.90
Buick, Hudson 8 Cyl., Kaiser, Fraser Merc. 49-51, Nash, Olds 8 Cyl., Pontiac, LaSalle 34-38	$8.28
Cadillac, Chry. 8 Cyl., Ford Mod. A. Assembly 29-31 LaSalle 39-40, Lincoln Zephyr, Continental, Packard	$9.15

(Note: Where no year is shown all year models are same price.)

DUAL SETS

35-48 Ford & Merc.	$25.00	49-50 Olds, 88, 98	$30.00
49-50 Ford & Merc.	$27.50	37-50 Chevrolet	*$40.00

All dual sets complete with everything needed to install, including instructions.
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A. All parts in the *DOUGLASS* Balanced Exhaust System bolt or clamp into place. No welding is required. A PERFECT FIT IS GUARANTEED.

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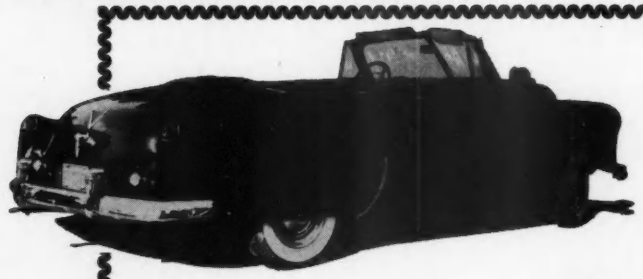

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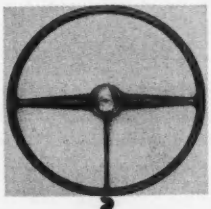

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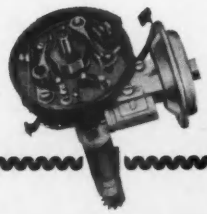

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- Eliminates missing and bucking.
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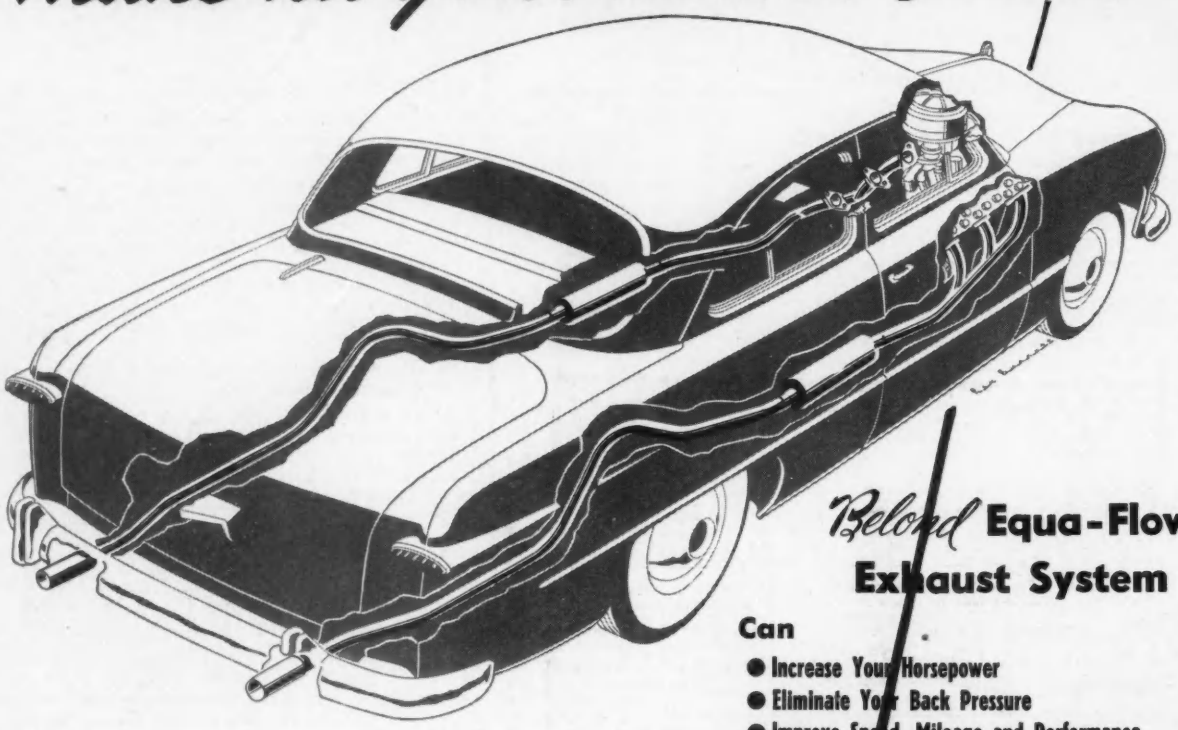

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With Mello-Tone Mufflers	$52.50	With Mello-Tone Mufflers	$74.50
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